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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

ESTABLISHED IN 1872

Vol. LXXV. No. 13 NEW YORK AND CHICAGO, SEPTEMBER 28, 1922 { Per annum, $4.00 { Single Copy, 10 Cents

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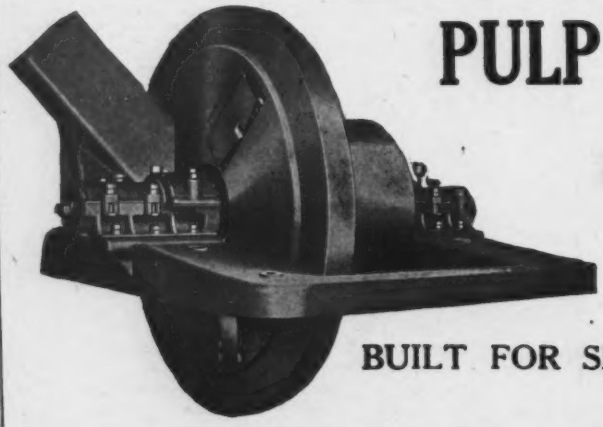

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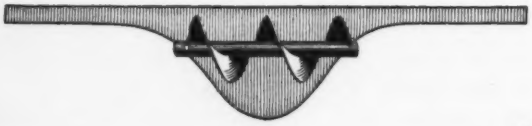

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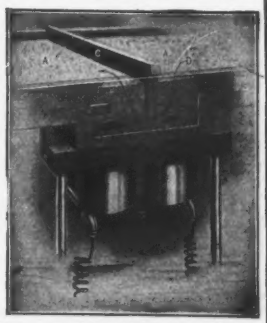

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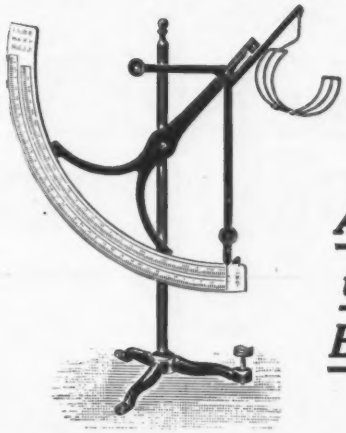

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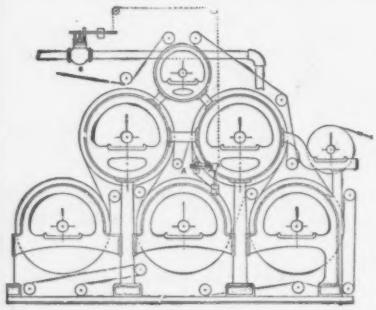

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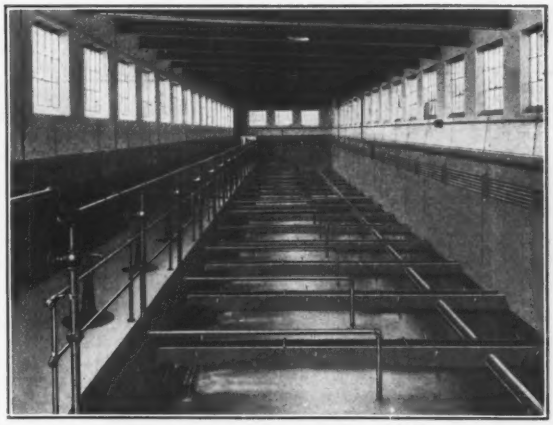

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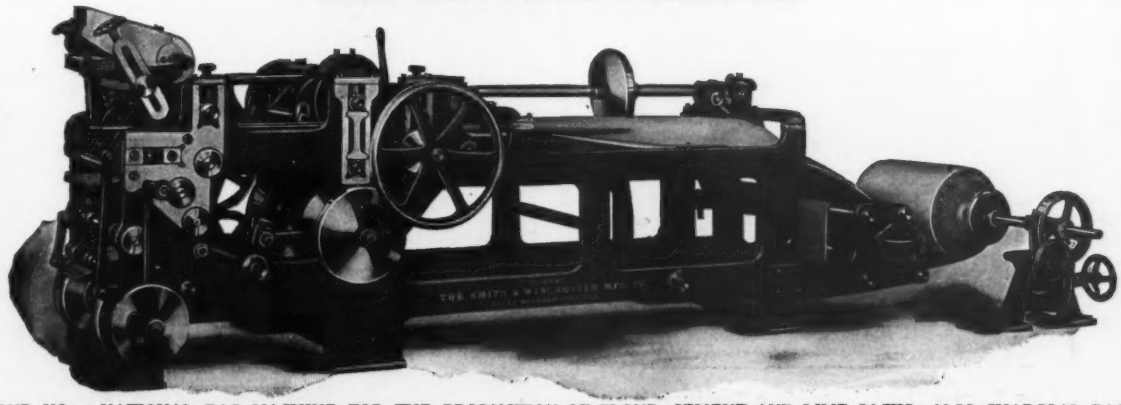

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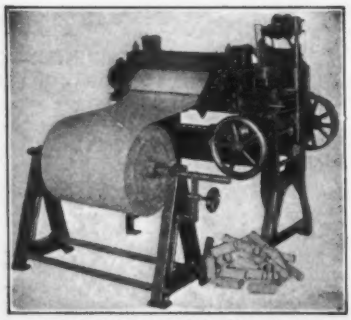
Automatic Tube Machines

For Making Tubes for Toilet Paper Rolls, Paper Towel Rolls



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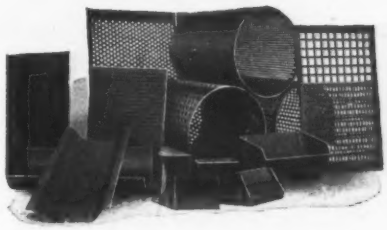

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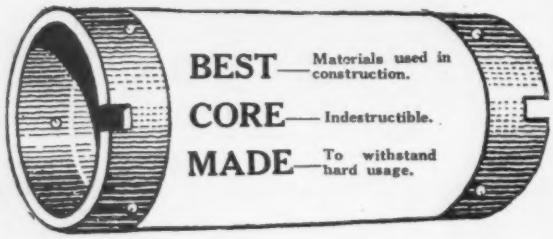

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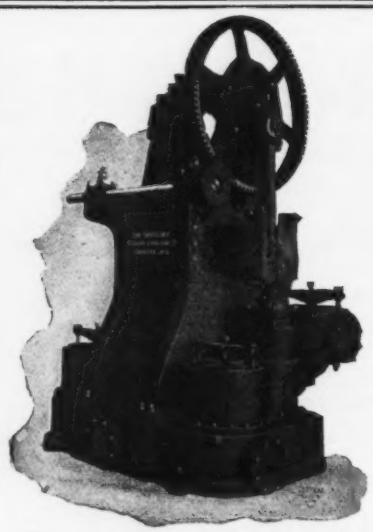

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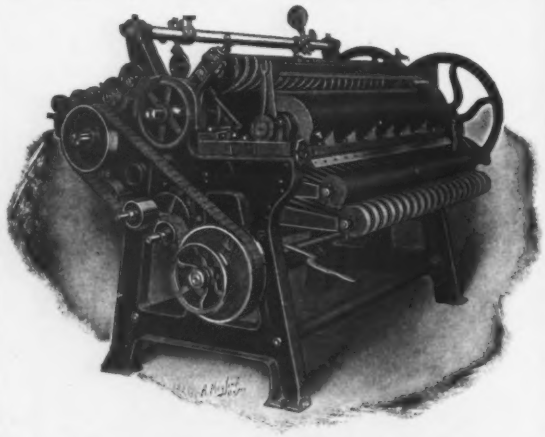

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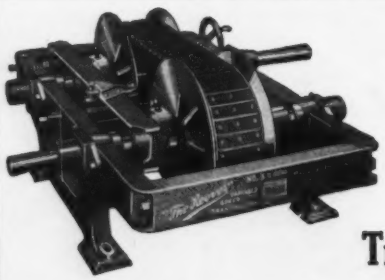

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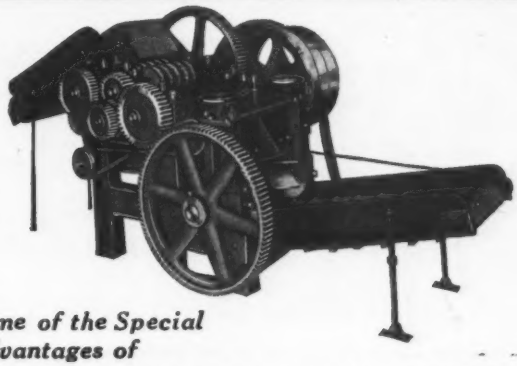

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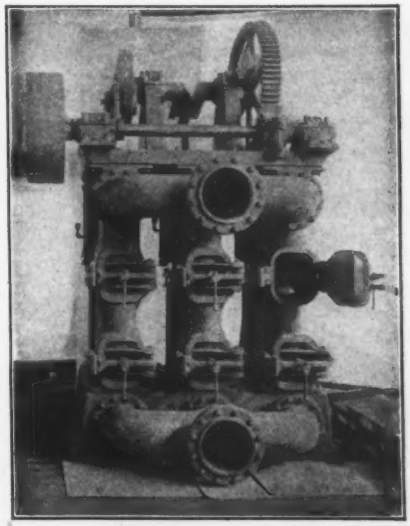
Builders of All Types of Paper Making Machines and Machinery



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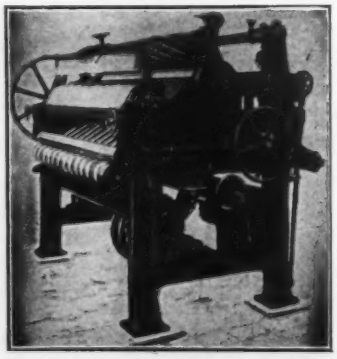

Revolving Paper Cutters—Rag Cutters—Cylinder Paper Machines—Washing and Beating Engines—Chilled Iron and Paper Calenders—Fan and Stuff Pumps—Engine Roll Bars and Bed Plates—

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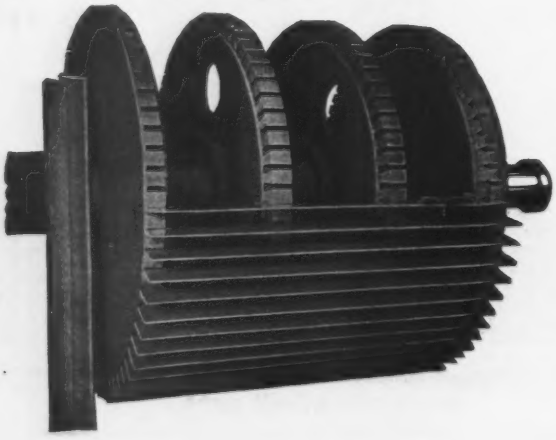
Starch



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We offer a full line of

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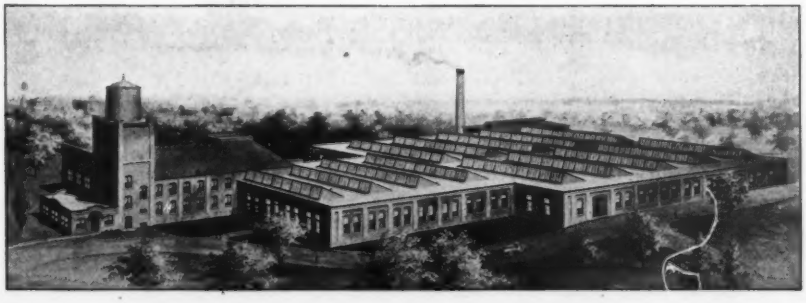

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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTY-FIRST YEAR

PUBLISHED EVERY THURSDAY BY THE

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PRODUCTION OF NEWS PRINT FOR THE MONTH OF AUGUST

Mill Stocks of Both Total News Print and Standard News, According to Statistics Just Issued By the Federal Trade Commission Decreased During the Month—Production For August, 1922, as Compared with August of Last Years Shows an Increase of About 30 Per Cent for Both Total News Print and Standard News and Three Per Cent Increase Over August, 1920.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 27, 1922.—The following is a tabulation of the reports received by the Federal Trade Commission from domestic manufacturers of news print paper, from jobbers buying and selling news print paper, and from publishers using news print paper. Import and export statistics of the Department of Commerce are also included in the review. Whenever possible the figures for 1922 are compared with those for the corresponding period of 1921, 1920, 1919 and 1918.

The figures which follow show the results of the Commission's tabulation for August 1918 to 1922, inclusive.

Total News Print:	No. of mills	Stocks on hand 1st of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
Aug., 1922	83	21,156	133,236	134,490	19,902
Aug., 1921	92	25,519	102,277	100,668	27,128
Aug., 1920	86	22,022	128,818	126,129	24 711
Aug., 1919	73	28,225	113,413	116,054	25,584
Aug., 1918	65	24,912	113,731	116,970	21,673
Total (8 mos.) 1922		23,934	944,217	948,249	19.902
Total (8 mos.) 1921		24,763	811,972	809,607	27,128
Total (8 mos.) 1920		15,369	1,018,295	1,008,953	24,711
Total (8 mos.) 1919		19,408	898,483	892,307	25,584
Total (8 mos.) 1918		31,713	857,108	867,148	21,673
Standard News (Included in total News Print):					
Aug., 1922	68	16 366	123,481	123,830	16,017
Aug., 1921	74	20,964	95,105	93,341	22,728
Aug., 1920	69	19,127	117,356	114,546	21,937
Aug., 1919	53	23,325	101,875	103,817	21,383
Aug. 1918	50	18,635	102,566	104,694	16,507
Total (8 mos.) 1922		19,607	878,182	881,772	16,017
Total (8 mos.) 1921		19,616	746,826	743,714	22,728
Total (8 mos.) 1920		12,338	933,456	923,857	21 937
Total (8 mos.) 1919		15,656	813,050	807,323	21,383
Total (8 mos.) 1918		26,482	770,927	780,902	16,507

NOTE—Above figures for total news print do not include hanging paper.

The average production of total news print and standard news, based upon the total combined production for the years 1917 to 1921, inclusive, amounted to 118,800 tons of total newsprint and 107,676 tons of standard news, for a period corresponding to August. The actual production for August, 1922, amounted to 133,236 tons of total news print and 123,481 tons of standard news, which, for total news print was 12 per cent above the average for the five year period and for standard news 15 per cent above the average.

The production of news print for August, 1922, compared with August, 1921, shows an increase, amounting to about 30 per cent for both total news print and standard news.

The production for August, 1922, compared with August, 1920, shows an increase of 3 per cent for the total news print and 5 per cent for standard news.

The production for August, 1922, compared with August, 1921, shows an increase of 17 per cent for total news print and 21 per cent for standard news.

The production for August, 1922, compared with August, 1918, shows an increase of 17 per cent for total news print and 20 per cent for standard news.

Mill stocks of both total news print and standard news decreased during, August, 1922.

Loss of Production

The following tabulation shows idle machine time reported to the Commission for the month of August, 1922. This does not include mills shut down during the entire month:

Reasons	No. of machines	Hours idle
Lack of orders	8	1,976
Repairs	5	605
Other reasons	3	146

Imports and Exports

The imports and exports of printing paper not duitable (practically all news print) and of wood pulp for the month of July, 1922, compared with the month of July, 1921, as shown by the records of the Department of Commerce, were as follows:

	July, 1922 Net tons	July, 1921 Net tons
Imports of News Print (total)	80,337	66,118
From Canada	73,457	58,183
Germany	1,150	4,586
Finland	2,179	11
Sweden	3,433	2,344
Other countries	118	994
Exports of News Print (total)	2,139	1,059
To Argentina	289	.....
Japan	85	.....
Cuba	1,101	378
Canada	86	.....
Philippine Islands	194	182
Other ccuntries	384	499
Imports of Ground Wood Pulp (total)	17,181	15,329
Imports of Chemical Wood Pulp (total)	90,637	32,787
Unbleached Sulphite	41.405	16,424
Bleached Sulphite	18,240	6,358
Unbleached Sulphate	27,611	10,003
Bleached Sulphate	3,381	2
Exports of Domestic Wood Pulp	1,569	1,493

The imports of newsprint for July, 1922, were 14,219 tons more than for July, 1921. The exports for July, 1922, were 1,080 tons more than for July, 1921.

The tonnage to "other countries" under "Exports of News Print" for July, 1922, includes 36 tons to Peru, 50 tons to Mexico, 62 tons to China, 69 tons to Colombia, and 55 tons to Uruguay.

Jobbers' Tonnage

The following tabulation shows the newsprint tonnage reported by jobbers during the month of August, 1922, compared with August, 1921, 1920, 1919 and 1918, together with commitments to buy and sell:

	On hand 1st of month Net tons	Received during month Net tons	Shipped during month Net tons	On hand end of month Net tons	Commitments to buy Net tons	Commitments to sell Net tons
Rolls, Aug., 1922.	1,418	10,592	10,326	1,684	16,646	16,810
Rolls, Aug., 1921.	1,560	1,960	1,954	1,566	21,984	20,935
Rolls, Aug., 1920.	3,253	4,147	3,014	4,386	26,944	27,747
Rolls, Aug., 1919.	3,348	4,635	4,919	3,064	37,304	43,762
Rolls, Aug., 1918.	2,709	1,751	1,733	2,727	36,052	35,574
Sheets, Aug., 1922	3,732	3,473	3,247	3,958	4,484	3,033
Sheets, Aug., 1921	3,935	1,743	2,087	3,591	5,058	3,754
Sheets, Aug., 1920	2,984	6,246	5,739	3,491	4,384	3,031
Sheets, Aug., 1919	5,880	3,178	3,354	5,704	3,817	2,165
Sheets, Aug., 1918	7,024	2,591	2,872	6,743	6,886	5,618
Total News Print:						
Aug., 1922	5,150	14,065	13,573	5,642	21,130	19,843
Aug., 1921	5,495	3,703	4 041	5,157	27,042	24,689
Aug., 1920	6,237	10,393	8,753	7,877	31,328	30,778
Aug., 1919	9,228	7,813	8,273	8,768	41,121	45,927
Aug., 1918	9,733	4,342	4,605	9,470	42,938	41,192

Stocks of rolls in the hands of jobbers at the end of August were 266 tons more than the stocks in the hands of the same jobbers at the beginning of the month. Stocks of sheets were 226 tons more at the end of August than at the beginning of the month. The net increase in the total stocks of news print in the hands of jobbers at the end of August amounted to 492 tons.

Commitments to sell roll news were 164 tons greater than commitments to buy. Commitments to sell sheet news paper were 1,451 tons less than commitments to buy. Total commitments to

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sell both rolls and sheets were 1,287 tons less than commitments to buy.

Publishers' Tonnage

Monthly tonnage reports from 693 (a) of the most important newspaper publishing concerns and associations grouped according to the principal business sections of the United States, together with a separate tabulation for the agricultural publications, show the following results for August, 1922.

Location of publishers (b)	Number of concerns	On hand first of month Net tons	Received during month Net tons	Used and sold during month Net tons	On hand end of month Net tons	In transit end of month Net tons
New England	80	16,994	17,730	15,297	19,427	1,656
Eastern States	179	51,321	67,031	57,231	61,121	11,313
Northern States	136	42,827	38,768	34,589	47,006	13,601
Southern States	82	9,177	11,133	9,279	11,031	3,372
Middle West	152	27,032	28,179	25,306	29,905	6,820
Pacific Coast	37	17,816	15,721	14,793	18,744	3,960
Farm Papers (c)	27	6,243	1,306	1,160	6,389	222
Total	693	171,410	179,868	157,655	193,623	40,944

(a) This number represents a larger number of publications.

(b) *New England* includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont; the *Eastcern States* include Delaware, the District of Columbia, Maryland, New Jersey, New York and Pennsylvania; the *Northern States* include Illinois, Indiana, Michigan and Ohio; the *Southern States* include Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia; the *Middle West* includes Arizona, Arkansas, Colorado, Idaho, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wisconsin and Wyoming; the *Pacific Coast* includes California, Oregon and Washington.

(c) The farm papers for the most part use special grades of news print instead of standard news.

Publishers' stocks increased 22,213 tons during the month. Average daily tonnage used during August was 93 tons less than the average used during July.

Publishers' stocks and transit tonnage on August 31 represented 47 days' supply at the existing rate of consumption.

Publishers' and Jobbers' total stocks and tonnage in transit on August 31 aggregated 240,209 tons.

The domestic consumption of standard news by metropolitan dailies using between one-half and three-fourths of a million tons annually for August, 1922, when compared with August, 1921, shows an increase of 17 per cent and an increase of 18 per cent when compared with August, 1920.

The above metropolitan dailies held 61 per cent of the tonnage on hand at the end of the month.

Average Price Paid by Publishers

The weighted average price of contract deliveries from domestic mills to publishers during August, 1922, f. o. b. mill, in car load lots, for standard news in rolls was $3.522 per 100 pounds. This weighted average is based upon August deliveries of about 50,000 tons on contracts involving a total tonnage of approximately 394,000 tons of undelivered paper manufactured in the United States.

The weighted average contract price based on deliveries from Canadian mills of about 30,000 tons of standard roll news in car load lots, f. o. b. mill, in August, 1922, was $3.500 per 100 pounds. This weighted average is based upon the August deliveries on contracts involving about 122,000 tons of undelivered Canadian paper.

The weighted average market price for August, of standard roll news in car load lots f. o. b. mills, based upon domestic purchases totaling about 10,000 tons, was $3.643 per 100 pounds.

Fort Howard Paper Co. Improvements

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 26, 1922.—Construction work has been started by the Fort Howard Paper Company, at Green Bay on a three-story finishing building, 140 feet long by 100 feet wide. The building will be completed by Jan. 1, 1923, it was said.

The structure will be of reinforced concrete and brick. It is to be used for finishing and storage rooms. The excavating is well underway and mason work is to be started soon.

To Buy Aldrich Paper Plant at Natural Dam

WATERTOWN, N. Y., September 25, 1922.—The Oswegatchie Paper Company, Inc., has just closed a deal for the purchase of the property of the Aldrich Paper Company of Natural Dam. Saturday morning the directors of the new corporation voted to sign a contract for the purchase of the property, and on Friday the directors of the Aldrich Paper Company voted to sell under the conditions agreed upon. The consideration involved is not announced, but it is recognized as another of the large paper mill transactions of this section in recent years.

Papers of incorporation of the Oswegatchie Paper Company, Inc., were filed with the Secretary of State at Albany Saturday morning. The company is capitalized at $200,000, with Samuel B. Wardwell and Addison T. Wardwell holding 350 shares of stock each and E. B. Sterling holding 300 shares.

The deal involves the purchase of all the assets of the Aldrich company, including the power sites and mills at Natural Dam and Emeryville and a timber tract of about 27,000 acres in the Adirondacks. The main mill was burned to the ground a few years ago and has not been rebuilt.

The men in the new corporation are all paper manufacturers. The directors elected Saturday morning were: E. B. Sterling, S. B. Wardwell, A. F. Wardwell, R. J. Buck, C. H. Anthony, O. A. Miller, W. C. Stebbins, D. M. Cosgrove and John A. Remington. The directors have elected Samuel B. Wardwell president. He is the secretary and treasurer of the West End Paper Company of Carthage, and Mr. Miller is vice-president of the Carthage company, with E. E. Sterling president.

The deal has been in progress for some time, and for the past several days has been in the final process of closing.

A new modern plant will raise itself out of the ruins of the Aldrich Paper Company and by next spring it will be producing fifty tons of news print paper a day, under plans already perfected by the new owners of the property. Plant and specifications have already been drawn by Charles E. Eaton of the Trust Company building, hydraulic and mill engineer, and copies have been sent out to contractors. If bids are satisfactory and materials are available, construction will be started at once and the plant will be ready for operation about April 1.

The main building, or machine room, will be erected on the site of the mill that burned at Natural Dam a few years ago. It will be a brick and steel structure 260 x 75 feet of one story and basement design. A Fourdrinier paper machine 164 inches wide will be installed to make paper at a rate of 700 feet a minute.

Other buildings in the plant include a finishing room 45 x 128 feet in dimensions, made of steel and concrete; a shipping room 42 x 45 feet, of brick and steel; a boiler house 44 x 45 feet, of steel and brick, and small structures for storage of coal and pulp.

The new boiler house will be modernly equipped with mechanical stokers, overhead bins with tracks above for unloading coal cars direct into bins of 1,200 tons capacity. A new radial brick stack 175 feet high with six feet inside diameter will be erected.

The sulphite mill, which was also destroyed by the fire, will not be replaced this year, it is said. The ground wood mill has been partially rebuilt and is in operation, but under present plans it will be rebuilt with the installation of new turbines and grinders. The power plant will be improved and new machinery will be placed in the pulp mill, giving it a capacity of twenty-five tons of ground wood a day. There is also a pulp mill at Emeryville with a capacity of thirty-five tons a day, and this is to be remodeled later.

The company owns about 5,000 horsepower in the two plants. There is also a considerable tract of timber near Aldrich and Newton Falls from which the company draws pulpwood and floats it down the Oswegatchie river to the mills.

The new owners are prepared to proceed at once to convert the property into a progressive paper manufacturing concern.

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MICHIGAN SUPERINTENDENTS REELECT FORMER OFFICERS

Clyde E. Nicely, of the La Salle Paper Co., of South Bend, Is Named Temporary Chairman of Division of Board Mill Superintendents with Headquarters in Chicago—Superintendents Plan to Form a Division at Holyoke Including Mills in Massachusetts, Vermont and Connecticut—Central Paper Co. of Muskegon, Mich., Announces Building Program to Enlarge Capacity 100 Per Cent.

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., September 25, 1922.—All officers were reelected at the annual meeting of the Michigan Division of the American Pulp and Paper Mill Superintendents' Association, held Thursday evening at the Park-American hotel. The hold overs are: Chairman, N. M. Brisbois, Sutherland Paper Company, first vice-chairman; Edward H. Gilman, Bryant Paper Company, second vice-chairman; Michael Redmond, Kalamazoo Paper Company, third vice-chairman; C. W. Ullrich, Wolverine Paper Company, Otsego secretary, George Pountain, Allied Paper Mills.

It was also decided to have an official program committee to assist the chairman in the preparation of the year's activities. That committee includes: Clarence Harter, Rex Paper Company; Jacob Parent, Western Board and Paper Company; Frank A. Johnson, Allied Paper Mills.

One plan favored is to make a really constructive question box a feature of this year's meetings. General discussions along all practical lines will be encouraged.

Plans for the expansion of the national association were given by Edward T. A. Coughlin, who attended the meeting of the executive board of the American Pulp and Paper Superintendents, held Sunday in Chicago.

"A division of board mill superintendents, with headquarters in Chicago and to be known as the Chicago division, is to be formed," said Mr. Coughlin. "Claude E. Nicely, of the LaSalle Paper Company, South Bend, has been named temporary chairman. His assistants are Charles Rainey, of the Midwest Box Company, and Lee Wilson. This division will include mills in Illinois, Indiana and Iowa.

"We will also form a Pennsylvania division. That work is in charge of John A. Bowers, of the Hammermill Paper Company, Erie, Pa.

"The mills at Niagara Falls and Buffalo have been transferred to membership in the Canadian division. There will be two sections in the Canadian branch, the eastern at Montreal and the western at Toronto. Peter Massey, national treasurer of the organization, plans to assist in the reorganization and development of the eastern Canadian division.

"We also plan to form a division at Holyoke, Mass., including mills in Massachusetts, Vermont and Connecticut. We believe there is a field here for a very powerful branch, though that depends somewhat on the attitude of American Writing Paper Company executives and other mill heads in that section."

Mr. Coughlin after the meeting stated that he plans to be active in the organization of the Holyoke division. He will be assisted in this work by Miss Pearl C. Barrett, national secretary, who is now writing personally to all superintendents in that territory, outlining to them the advantages of the organization.

Michigan division members are planning to attend the session of the Technical Association of the Pulp and Paper Industry, October 6 and 7, in Detroit.

Pusey & Jones Building Unique Paper Machine

A paper machine, every part fully equipped with ball bearings, the first of its kind manufactured in America, is now being turned out by Pusey & Jones, Wilmington, Del.

Preliminary details of the new machine were disclosed at an informal talk, given by H. J. McDowell, of the Pusey & Jones sales department, a recent visitor to Kalamazoo.

"We are not prepared to give any extended detail account of the new machine until it has been fully tested," said Mr. McDowell. "We are all interested in saving power, which means coal. We believe this machine will show a reduction of 80 per cent in power. In a recent test, a 12,000 pound dryer was moved at a pressure of about 10 pounds.

"This machine is for the Chester Paper Company and will be used in the manufacture of tissue paper."

Mr. McDowell also stated that he believed the day of the high speed machine is passing. He placed the future limit at 700 to 800 feet. He gave it as his opinion that the cost of operating high speed machines is too great.

Central Paper Co. Making Improvements

The Central Paper Company, of Muskegon, announces a building and improvement program for the immediate future, which, it is claimed, will increase the capacity of the plant fully 100 per cent in the next 12 months.

While all details are not announced, it is understood the present mill is to be enlarged by the erection of several additions and the installation of the latest type of machinery. A new boiler and power house are also to be included. The company will generate its own electric power. Officials of the company state that from 600 to 700 hands will be given employment as soon as the new mills are completed.

The Central Paper Company was located in Muskegon 22 years ago, with a daily output of 12 to 15 tons. This has since been increased to 60 tons daily and is to be doubled. The company owns its own boats, used for the transportation of groundwood and wood pulp timber.

General News of the Trade

George P. Wigginton, president of the Kalamazoo Loose Leaf Binder Company, has been chosen county chairman of the Republican committee. Mrs. F. M. Hodge, wife of F. M. Hodge, president of the Kalamazoo Paper Company, is vice-chairman.

Fire in the stock house of the MacSimBar Paper Company, Otsego, took two hours to subdue. While but a small hole was burned in the roof, the loss by water amounts to several thousand dollars.

James L. Hunt, employee of the King division of the Allied Paper Mills, sustained a broken leg, due to a fall from the second to first floors.

The Northern Paper Mills, Green Bay, Wis., and Ontonagon, Mich., have filed articles with the secretary of state, at Lansing, announcing an increase in capital stock.

"The Frances," $150,000 motor auxiliary yacht, property of G. H. Wood, president of the River Raisin Paper Company, Monroe, was recently destroyed by fire, while docked near the Monroe Yacht Club. It was 118 feet long, 40 feet beam and carried a crew of nine men. There were accommodations for ten people in the after cabins.

Bertrand Hopper, secretary and general manager of the Kalamazoo Stationery Company, with his family is spending a month at Lake Placid, in the Adirondacks.

A. L. Pratt, president of the Allied Paper Mills, has returned from an extended trip to Pacific Coast points. He combined business with pleasure, visiting the trade in San Francisco, Portland, Seattle and other cities.

A. H. Gilman, vice-president of the Allied Paper Mills and in direct charge of sales was in New York city during the past week on business.

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CONTINUED IMPROVEMENT IN PHILADELPHIA MARKET

Orders in Individual Instances Are Somewhat Larger Than They Have Been and Buyers Are Showing More Disposition to Anticipate Their Wants—Paper Men Hold Interesting Golf Tournament at the Merion Cricket Club—Whitaker Paper Co. to Open Warehouse October 1 at 26 North Fifth Street in the Very Heart of the Philadelphia Paper District.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, September 26, 1922.—The trade attributes the steady and to some extent decided increase in business this week over the preceding to the improved industrial and financial conditions. So far as the paper trade is concerned, it felt the effect of these influences, not only in a larger number of orders, but what is more satisfactory in a slight increase in their average size. The very largest buyers of paper, the big publishers and the leaders in the printing trade, sometime ago foresaw the trend of conditions and they placed their orders accordingly. The increase which came during the past week was from the paper buyers in moderate amounts and they are merely following in the wake of the more discerning and are placing business in reasonable anticipation of growing demands to come.

Since the month began, at least four of the larger mills, leaders or near leaders in the particular class of papers in which they specialize, have readjusted prices, marking them up, not horizontally, but all along the line and in moderate amounts.

Market demand and mill advances were particularly noticeable in books and these are now from a half cent to a three-quarter cent higher than when September began. Coated papers also have gone up and almost to as large an extent. Cheap sulphite bonds fell into about the same class, so far as increased values are concerned, as book papers. The higher priced bonds advanced slightly. The coarse paper market also is one of advancing prices, but not so general as the fine. Bogus wrappings are in excellent demand and are quoted now at from one-half to three-quarter cents higher than they were at the months beginning and from 75 to 100 per cent higher than they were at the ebb of prices some months ago. Tissue and wax paper production have gone on so steadily and so much faster than demand that supplies of these grades are now plentiful and the price is tending toward weakness. Krafts remained during the week unchanged from the advances on the No. 2 grades which took place during the preceding week and the slight decrease on one of the brands of the No. 1 grade, which also then was announced. In a general way, the coarse paper market is now showing a strength and healthiness in tone as against a rather uncertain, although hopeful condition earlier in the month.

Paper Stock Market Easier

The market for paper stock was little changed last week, mill demand easing off a trifle, but not to such an extent as to effect values—a fact which probably can be explained by the rather limited quantities which are coming into the warehouses of the larger packers and the keen competition which now exists among them and which has resulted in the offering of higher prices to those having stocks of waste paper on hand than have been made at any time this year. An influence of importance in this competition has been the organization of the Waste Paper Division of the Typothetæ of Philadelphia. Members of the Typothetæ in many cases changed from the stock dealer with whom they had been having business relationship for years in order, through their loyalty to the Typothetæ, to give the new system a tryout. There followed, therefore, a realignment of dealers and customers, the former bidding against the other in order to secure new connections to take the place of those which had been lost.

Though the Waste Paper Division of the Typothetæ was at its inception hopeful of being able to work up a larger tonnage than it now has, the officials conducting it still express their satisfaction with its operation. There were completed during the week the figures for August collection by the Division showing an aggregate of over 90,000 pounds as against about 75,000 pounds for July. With the increase of business, this month, it is expected that the September record will exceed 100,000 pounds.

Paper Men Play Golf

The annual golf tournament of the Paper Trade Association of Philadelphia was played on Tuesday and Wednesday of last week on the West Course of the Merion Cricket Club near Ardmore, Pa., a site of magnificent distances and one which, because of its hazards, brought out the best playing qualities of the rather limited number who were able to attend. Both days were cool and pleasant and the tournament therefore almost was ideal. Good fellowship reached its high water mark at the clubhouse on Tuesday evening over which E. Weihenmayer of the Jessup & Moore Paper Company was appointed toastmaster. Everyone made addresses, but they were all entirely informal. On Tuesday morning the players qualified in four eights and following this elimination process, the afternoon was given over to the first round of match play. On Wednesday morning there followed the semi-finals and in the afternoon the final round. Harry F. Donahue, of the Molten Paper Company and of the Aronimink Golf Club, won the low net prize with a score of 72, also having the low gross of 80, but the Association offered no prize for that for the reason that in order to place all on terms of equality, prizes were offered only for the low net records. In the kickers' handicap three of the players tied with net scores of 74, these being Norman Bardeen, of the Lee Paper Company; E. A. Weihenmayer, of the Jessup & Moore Paper Company, and Kit S. Warner, of John F. Sarle, New York.

The feature of the play of the first eight was a twenty-one hole contest as against the regular eighteen and in this Alexander Calder, of the Union Bag and Paper Corp., won out over W. H. Anders, of the Perkins-Goodwin Company, New York. In the second eight W. D. Judd, of Hampshire Bond fame won from Eugene W. Fry, of the Jessup & Moore Paper Company. In the finals on Wednesday Mr. Calder won the championship after a battle with H. A. Earle, manager of the New York branch of the Whiting-Patterson Company. This contest was particularly keen and in order to decide it, the game progressed to twenty-one holes before Calder whose national rating is four, could be greeted as victor. The complete score for the qualifying rounds and the summary for the final follows:

			Total
FIRST EIGHT			
H. F. Donahue, Philadelphia	43	37	80
Roger Taft, New York	41	40	81
Alex Calder, New York	45	41	86
H. A. Earle, New York	40	46	86
F. W. Westlake, New York	42	46	88
W. H. Anders, New York	46	42	88
Louis Calder, New York	45	46	91
E. A. Weihenmayer, Philadelphia	47	44	91
SECOND EIGHT			
E. W. Fry, Philadelphia	46	45	91
W. D. Judd, Holyoke, Mass.	46	48	94
B. C. Hill, New York	44	51	95
Harrison Starr, New York	50	46	96
C. H. Morian, Philadelphia	49	47	96
Fred Burkhardt, Holyoke, Mass.	48	48	96
W. E. Perry, Springfield, Mass.	48	49	97
S. A. Benedict, Philadelphia	47	55	102

(*Continued on page 22*)

Clean Water
Means Less Trouble

Clean water means fewer specks in the paper, longer service from wires and less trouble with the machinery.

Paper makers have found that the Bird Water Filter is a great help in reducing their operating troubles. It can be used independently or ahead of the sand filters.

The Bird Water Filter is simple in design, easy to operate and inexpensive.

It does a lot of work for little money. Let us send you details.

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Canadian Builders of Bird Machinery
Canadian Ingersoll-Rand Co., Ltd.,
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Montreal, Canada.

BIRD WATER FILTER

88-236

CONTINUED IMPROVEMENT IN PHILADELPHIA MARKET

(*Continued from page 20*)

THIRD EIGHT

Arthur B. Sherrill, Philadelphia	50	53	103
Norman Bardeen, Kalamazoo, Mich.	53	51	104
Wm. J. Boyd, Philadelphia	54	50	104
Kit S. Warner, New York	54	50	104
Wallace M. Weeks, Fulton, N. Y.	58	48	106
Wm. H. Holden, New York	50	57	107
R. P. Murray, New York	53	54	107

FOURTH EIGHT

Allen E. Whiting, Philadelphia	55	54	109
J. L. N. Smythe, Philadelphia	54	56	110
S. L. Willson, St. Louis	55	58	113
W. D. Pringle, Philadelphia	54	60	114
Geo. Cadwell, Holyoke	57	63	120
I. F. Megargee, Philadelphia	70	61	131

The first round of match play resulted as follows:

H. A. Earle, New York, defeated H. F. Donahue, Philadelphia, 4 and 3.

Roger Taft, New York, defeated Louis Calder by default.

Alex Calder, New York, defeated W. H. Anders, New York, one up, 21 holes.

E. A. Weihenmayer, Philadelphia, defeated J. Westlake one up.

SECOND EIGHT

W. D. Judd, Holyoke, Mass., defeated E. W. Fry, Philadelphia, one up, 19 holes.

W. E. Berry, Springfield, defeated C. H. Morian, Philadelphia, 2 and 1.

F. Burkhardt, Holyoke, Mass., defeated B. Hill, New York, 5 and 4.

Harrison Starr, New York, defeated S. A. Benedict, Philadelphia, 6 and 5.

THIRD EIGHT

Wallace M. Weeks, Fulton, N. Y., defeated Kit Warner, New York, 3 and 2.

R. A. Wright, Springfield, Mass., defeated R. P. Murray, New York, two up.

W. J. Boyd, Philadelphia, defeated Norman Bardeen, Kalamazoo, Mich., 2 and 1.

W. H. Holden, New York, defeated A. B. Sherrill, Philadelphia, 2 and 1.

FOURTH EIGHT

S. L. Willson, St. Louis, defeated I. F. Megargee, Philadelphia, 3 and 1.

A. E. Whiting, Philadelphia, and George Cadwell, Holyoke, Mass., byes.

J. L. N. Smythe, Philadelphia, defeated W. D. Pringle, Philadelphia, 5 and 3.

The final summaries follow:

First eight, semi-finals.—H. A. Earle, New York, defeated Roger Taft, New York, one up 19 holes.

Alex Calder defeated E. A. Weihenmayer, 5 and 3.

Final.—Calder defeated Earle, 1 up, 21 holes.

First beaten four, semi-finals.—L. Calder, New York, defeated H. F. Donahue, New York, 1 up; W. H. Anders, New York, defeated F. Westlake, Philadelphia, by default.

Final.—Anders defeated Calder by default.

Second eight, semi-finals.—W. D. Judd, Holyoke, Mass., defeated W. E. Perry, Springfield, Mass., 2 up; F. Burkhardt, Holyoke, Mass., defeated H. Starr, New York, 4 and 3.

Final.—Burkhardt defeated Judd, 1 up.

Second beaten four, semi-finals.—C. H. Morian, Philadelphia, defeated E. W. Fry, Philadelphia, 1 up; B. C. Hill, New York, defeated S. A. Benedict, Philadelphia, 1 up.

Final.—Morian defeated Hill, 1 up.

Third eight, semi-finals.—W. M. Weeks, Fulton, N. Y., defeated R. A. Wright, 3 and 2; W. H. Holden, New York, defeated W. J. Boyd, Philadelphia, 4 and 3.

Final.—Holden defeated Weeks, 7 and 6.

Third beaten four, semi-finals.—K. S. Warner, New York, defeated R. P. Murray, New York, 1 up; A. B. Sherrill, Philadelphia, defeated Norman Bardeen, Kalamazoo, Mich., by default.

Final.—Sherrill won from Warner by default.

Fourth eight, semi-finals.—S. L. Willson, St. Louis, defeated A. W. Whiting, Philadelphia, 2 up; George Cadwell, Holyoke, Mass., defeated J. L. N. Smythe, Philadelphia, 3 and 2.

Final.—I. F. Megargee, Philadelphia, won from W. D. Pringle, Philadelphia, by default.

Whitaker Paper Co. to Open Warehouse

The long anticipated move of the Whitaker Paper Company opening a Philadelphia warehouse is about to be realized and on October 1 it will throw open the doors of the building at 36 North 5th street in the very heart of the Philadelphia paper trade world. Whether the executive offices, now located in the Crozer Building at 15th and Chestnut streets, will be removed to the new location was not announced, although it is believed that for the present at least they will not be changed. Advent of the Whitaker Company into this market in an aggressive way had been the subject of trade speculation for years before the company actually opened a Philadelphia office maintained, however, as a branch of the headquarters for this district in Baltimore. Stocks were carried in Baltimore and were shipped here. Now, however, the further move of a Philadelphia warehouse is to be made. The new location brings the Whitaker Company directly into the paper center. The building is a three story and attic structure of brick and is of fair size.

Building for Paper at World's Fair

The world's best offerings past and present in paper making, its conversion into printed, engraved and lithographed matter, and into its manifold other uses are to be assembled for the first time in the history of world's fairs, in a separate building and under on roof at the Philadelphia Sesqui-Centennial to be held in this city in 1926. Formal statement of this purpose was made during the week by Secretary Manager Franklin W. Heath of the Typothetæ of Philadelphia, upon receipt by him of an identical set of resolutions approved by both the national and the local bodies of all the industries encompassed in the broadest interpretation of the term—the graphic arts. The Philadelphia Sesqui-Centennial Committee organization having now been completed by the appointment of a Director General, Chief Engineer and Chief Architect, the Philadelphia Graphic Arts Committee felt that the time was opportune for making a public statement of its plan and to that end there were given out copies of the resolutions adopted and the personnel of the temporary committee in charge of the project. While in other world's fairs the processes and the products of the graphic arts industry were scattered through many buildings, making a comprehensive and a comparative study almost impossible, it is proposed in the Philadelphia Sesqui-Centennial to aggregate all in a Temple to the Graphic Arts, wherein shall be made the paper for the daily newspaper, descriptive of the day by day developments in the big show, and which is to be used as headquarters for visiting newspaper men and all interested in any way in paper manufacture or paper conversion. It is understood that exhibitors at the recent exposition in Boston agreed not to

(*Continued on page 24*)

FOR QUALITY PAPERS USE

A-1 BLEACHED SULPHITE PULP

MANUFACTURED BY

Kellner-Partington Paper Pulp Co., Ltd.

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J. Andersen & Co.

21 East 40th Street **New York, N. Y.**

WAYAGAMACK

KRAFT PULP

Uniform in Quality
Essential for Strength Requirement

The Pulp and Paper Trading Company

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Sole Agents for United States for

CANADIAN KRAFT, Ltd. **Three Rivers, Canada**

CONTINUED IMPROVEMENT IN PHILADELPHIA MARKET

(*Continued from page 22*)

participate in any other exhibition until the Philadelphia Sesqui-Centennial in 1926. Prospectively, therefore, the Temple of the Graphic Arts and its contents will have an importance not possible under any other conditions.

The resolution adopted by the National Paper Trade Asso. and The Phila. Paper Trade Asso., follows:

Whereas, The printing and publishing industry has made most remarkable strides, not only in the past one hundred and fifty years, but particularly the last fifty years; and

Whereas, This development has been quite as remarkable in all forms of advertising, engraving, lithographing, bookbinding and allied trades; and

Whereas, There will be held in Philadelphia during 1926 a Sesqui-Centennial Exhibition of progress, celebrating the one hundred and fiftieth anniversary of the signing of the Declaration of Independence, and

Whereas, This will bring people from all parts of the world to see the best in arts and science;

Therefore be it resolved, that The National Paper Trade Asso. promises its hearty support to this exhibition and recommends that one of its principal buildings be called the Graphic Arts Building, in which will be concentrated all exhibits showing the development in advertising, printing and publishing, engraving, lithographing, as well as the best products of the crafts associated in this industry, such as paper, ink, printers' supplies, novelties used in direct-by-mail advertising, et cetera. It is suggested that this building be used as headquarters for the newspaper and periodical profession and provision made for their activity and comfort. It is also suggested that all official publications of the Sesqui-Centennial be issued from this building and under the direction of the Publicity Department.

It is further resolved that, The National Paper Trade Asso. urge its members to give their fullest co-operation in making the exhibition and the Graphic Arts Building a complete success;

Be it further resolved, that a copy of these resolutions be forwarded to the Sesqui-Centennial Committee representing the Graphic Arts of Philadelphia for them to present to the proper Sesqui-Centennial authorities.

The local committee in charge is as follows:

Typothetæ of Philadelphia, Charles W. Beck, Jr.; Photo-Engravers Asso., Charles W. Beck, Jr.; Public Ledger, Charles Tyler; Philadelphia Inquirer, Edward I. Bacon; North American, Jas. P. Considine; Phila. Record, Rowe Stewart; Evening Bulletin, Wm. Wintson; Craftsmen Club, Hubert S. Foster; Phila. Stationers Asso., Frank R. Welsh; Poor Richard Club, Charles A. Stinson; Booksellers Association, Peter Reilley, Better Business Bureau, Elwood Russell; Electrotypers Association, Adam Suelke; Paper Trade Association, Allen E. Whiting; Lithographers Association, Harrison K. Caner; Engravers Club, W. W. Blaisse.

The resolutions have been adopted by the following Graphic Arts Organizations; National Bodies, United Typothetæ of America, National Paper Trade Association, National Association Printing Ink Manufacturers, National Lithographic Asso., National Asso., Printing House Craftsmen, International Electrotypers Asso., Asso. of Business Papers, American Institute of Graphic Arts. Local; Typothetæ of Phila., Phila. Stationers Asso., Phila. Paper Trade Asso., Greeting Card Asso., Poor Richard Club, Phila. Club Printing House Craftsmen, Phila. Photo-Engravers Asso., Bookbinders Asso. Electrotypers Asso., Engravers Club, and all the Philadelphia daily newspapers save the Bulletin.

General News of the Trade

John J. Costello and Peter DiBiaso, trading as the National Wiping Cloth Company, of Philadelphia, will dissolve partnership on October 1 and Mr. DiBiaso will continue the business under the old name and at the old location. Mr. Costello has joined the force of the Penn Paper and Stock Company of which William J. McGarity is proprietor and the Penn Company has opened a new department, dealing in new and old sanitary wiping cloths with Costello in charge.

A. Clarence Holland, general manager for Sylvester S. Garrett, coarse papers, Third and Spruce streets, has returned from a visit to the New England mills. F. A. O'Neill, head of the Franklin Paper Company, has sold his property at Magnolia and Woodlawn streets, Germantown, and has purchased another on Pelham Road into which he removed during the week upon the return of his family from Chelsea, where they spent the summer.

Announcement comes from Huntingdon that Pittsburgh capitalists have purchased thousands of acres of timberland on the property of the Rockhill Coal and Iron Company and that scores of men will be employed for the next four years in cutting the timber, in what is said to be the largest project of its kind in the history of the county.

Harry Conradi, one of three brothers on the sales organization of the D. L. Ward Company, has resigned his position in order to accept another on the sales force of the Garrett-Buchanan Company.

Contending that an employee of the Barrett Company, manufacturer of roofing and tarred products, died from the effects of sleeping sickness and not from the affect of chemicals inhaled in the course of his work, physicians for the company last Friday induced the workmen's compensation board to reserve decision on a claim for compensation. The claim was made by Mrs. Henrietta C. King, of Andalusia, near Philadelphia, whose husband died a year ago in the Frankfort Hospital two days after being seized with convulsions. He was employed as a welder by the Barrett Company.

The Wilcox, Walter, Furlong Paper Company, 231 Chestnut street, is installing a 35-inch cutter of the Diamond style.

The property of the Gatti-McQuaid Company, paper mill supplies, 606 North American street, is included in the assets of the embarrassed company and for that reason an ancillary receiver, John B. Johnston, has been appointed in the United States District Court.

Uncle Dan Bishop, in charge of the information desk in the office of the D. L. Ward Company, has returned from Atlantic City, where, as has been his custom for many years, he led the march of the Shriners on Shriners' Day.

President Norbert A. Considine, of the Paper House of Pennsylvania, is attending the Strathmore meeting.

Among the week's visitors were Alexander Thompson, of the Champion Coated Paper Company, and its vice-president and sales-manager, and Richard D. Rising, of the B. D. Rising Paper Co.

Good Progress on Westminster Paper Mills

Appleton, Wis., September 25, 1922.—M. F. Herb, one of the organizers and president of the Westminster Paper Mills, Ltd., which is erecting a large tissue mill at New Westminster, B. C., Canada, left this week for the west after spending several weeks disposing of stock to investors in and near Appleton. Appleton stockholders, at a meeting just before Mr. Herb left, elected O. P. Schlafer, a prominent local merchant, as a member of the board of directors of the new company.

Mr. Herb said the company's mills are rapidly nearing completion and that paper manufacture will be started next spring. It is the only tissue mill within 2,500 miles. Mr. Herb has been connected with a number of paper mills in the Middle West as superintendent and manager in the last quarter century.

The Beloit Two Drum Winder

Has made a place by itself on its own merits.

An astonishing list of repeat orders is its best advertisement.

BELOIT IRON WORKS
BELOIT, WISCONSIN

PAPER DEMAND IN TORONTO SHOWS STEADY INCREASE

Mills Are Quite Busy and Paper Merchants Appear Well Pleased with the Outlook—Prices Show a Stiffening Tendency Particularly in Book and Writing—Long Price List Which Is Now in Effect with the Printing Trade Is Reported to Be Working Out Quite Satisfactorily—Good Progress Is Reported on the Program for Developing Paper Plants at Kenora.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ontario, September 25, 1922.—Business in the pulp and paper line is increasing steadily with the advent of fall and larger orders are coming to hand. Mills are quite busy and paper merchants appear well pleased with the outlook. There is a tendency to stiffen prices in certain lines, particularly in book and writing papers. It is rumored that an advance may be expected in a few days. The long price list, which is now in effect so far as the printing trade is concerned, is reported to be working out fairly well, although some wholesalers are complaining of the extra work entailed in the office by reason of the system. Representatives of Old Country firms have been visiting Toronto and other cities and taking orders for imitation art paper in large quantities. Coated paper mills are getting busier and manufacturers of envelopes and special lines of Christmas papeteries are rushed.

Fall trade generally is looming up exceptionally well. Board manufacturers have been compelled to refuse orders as paper box plants have about all the work they can attend to at the present time and some plants are working over hours in order to get out the material and make deliveries. Toilet and tissue mills are getting their share of business and kraft paper is once more in good demand after a falling off for some time. Manilas are still weak, but fiber papers are having a stronger call. The printing trade is also picking up. The requisitions for news print keep up well and pulp is moving more freely with prices showing an inclination toward stiffening.

New Pulpwood Weights in Force

There have recently come into effect some changes which are both reductions and advances in the estimated weights used on pulpwood. The new scale of weights adopted by the railways is as follows:

Pulpwood Per Cord:	Green	Partly Seasoned	Dry
Balsam, Rough	4,500	R4,000	R3,500
Peeled	R4,200	R3,600	R3,000
Spruce, Rossed	4,800	4,200	3,600
Peeled	4,000	3,500	3,000
Poplar, Rough	4,500	3,900	A3,300
Peeled	4,500	3,900	R3,200
Hemlock, Rough	A4,800	A4,200	3,600

R—Reduction. A—Advance.

New System of Measuring Timber

An important conference was held recently at the offices of Hon. Beniah Bowman, Minister of Lands and Forests for Ontario, in an effort to reach a standardization of measuring and culling timber. The Crown Land timber agents for the province were present, and it was stated that the gathering did not mean any action in regard to the Doyle rule, the abolition of which has been recommended by Judson F. Clark, forestry expert, who advocates selling wood on a cubic content basis instead of the estimated product in board feet.

Good Progress on Kenora Plants

E. W. Backus is carrying out an extensive building program in and around Kenora, Ont. Two million dollars will have been spent by next November at Rideout Bay, Lake of the Woods district, by the syndicate headed by Mr. Backus. This is the beginning of a projected production of paper greater than the world has yet seen from any single plant. This year the company intends to develop an 80-ton pulp mill unit, next year from 100 to 150 tons of news print paper and each succeeding year to keep adding to the manufacturing capacity of the plant until a total of 1,000 tons of news print per day has been reached. The additional electric power with which to manufacture the paper will be supplied from the proposed power development at White Dog rapids. The object of the work being done by the Backus-Brooks company on the east branch of the Winnipeg River is the furnishing of the necessary power with which to operate the first unit of the paper mill now being built in the Rideout district. At the time the municipal light plant was built, only four generating machines were installed with a capacity of 3,500 horsepower. When this plant was taken over by the Backus-Brooks company it was with the idea of widening out the channel to give sufficient flow of water from which to develop some 8,000 horsepower.

Brampton Firms Report Good Orders

Gummed Papers, Limited, Brampton, report having had a very successful season so far and say that the prospects for fall business are good and that customers seem to be needing more goods than they have for some time. The Brampton Paste and Gum Company also state that business with them has been steadily improving and that they are now manufacturing paste for the use of paper mills, paper box makers and various other lines. The outlook for fall is much better than it has been.

Must Show Country of Origin

Toronto paper merchants have received word from Ottawa that on and after November 1, printed and lithographed matter of all kinds including books and pictures and also wooden or fiber lead pencils imported into Canada must be stamped in such a manner as to indicate the country of their origin. Regulations to this effect have been passed by the government as provided for in the last session amendment to the Customs Tariff Act.

Port Arthur Man Gets Pulpwood

W. T. McEachren, of Port Arthur, was the successful tenderer on the seventy square miles of burnt timber disposed of during the past week by the Ontario Department of Lands and Forests. The limits sold are partly in the Nipigon Forest Reserve near Jellicoe and partly in Nezah on the C. N. R. The bid calls for payment of $7.50 per thousand for pine, $5 for spruce, $4 for other timber and $1.20 per cord for pulpwood. The sale is the largest made by the department for some months. The limit is rich in pulpwood and a large amount will be taken out this fall and winter.

Notes and General Jottings

R. I. Finlay of the United Paper Mills, Toronto, who has been spending a vacation at his new summer home in Oakville, has returned.

It is expected that the cut of pulpwood in Northern Ontario will be larger this season than for some time. Labor is reported to be scarce at many points and wages are about 25 per cent higher than they were at this period last year. The demand for pulpwood is improving somewhat.

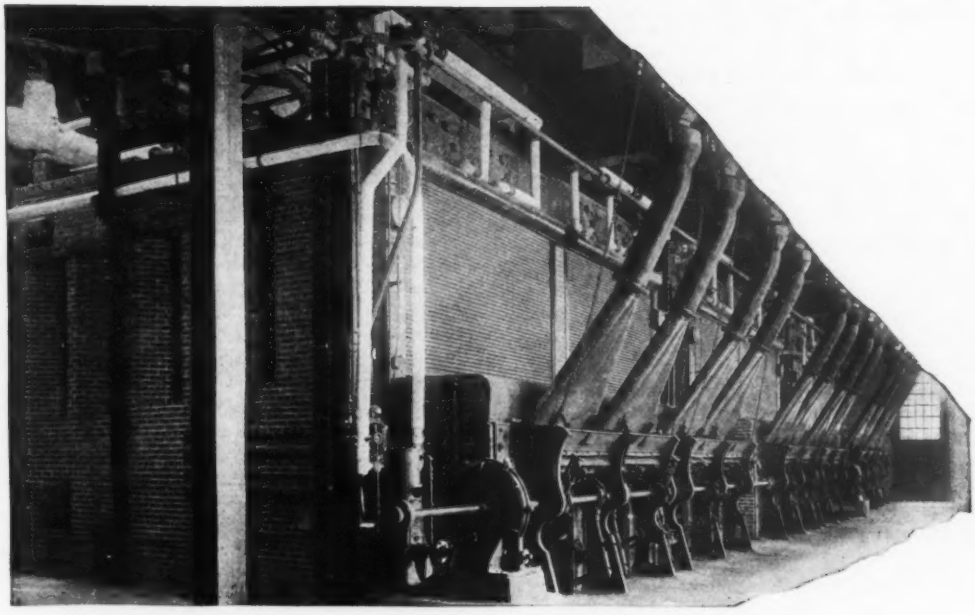
F. Mackey Resigns From J. Spaulding & Son Co.

[FROM OUR REGULAR CORRESPONDENT]

TONAWANDA, N. Y., September 25, 1922.—F. Mackey has tendered his resignation as superintendent of the new paper mill of J. Spaulding & Sons Company, Inc., here. Mr. Mackey has not announced his plans for the future but will leave soon for Newark, Del.

XUM

FOR INCREASED FUEL ECONOMY



Can your boiler room strengthen your profit margin?

WHERE manufacturing costs are excessive, a large part of the blame can generally be traced to the boiler room. No other part of the average plant offers such opportunities to improve methods and equipment, increase efficiency, and effect substantial savings at so small a cost.

Foremost in importance are the boilers themselves. Stokers, forced draft, meters and recorders can accomplish but little unless the boilers are correct and economical in design and construction.

Edge Moor Water Tube Boilers are designed to convert the highest possible number of heat units in each ton of coal into usable power. Many plant owners have found it highly profitable to replace their old, inefficient boilers with Edge Moors. Their record of savings extends over a period of several decades.

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Water Tube BOILERS

PAPER MILLS IN NEW ENGLAND UNEASY OVER COAL SUPPLY

British Coal Is, However, Available Now at Lower Prices and Has Helped to Keep the Situation from Becoming More Critical—Paper Boards Continue to Increase in Price—Owing Probably to Heavy Demand from Board Mills Prices for Waste Paper Are Appreciating—Heavy Imports of Paper and Paper Goods from Abroad Are Reported in Boston Market.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 25, 1922.—Shipments of coal being delayed by shortage of cars and other delays are causing considerable uneasiness among New England paper mills, according to the reports obtained from Boston paper merchants. British coal, being received in large quantities in both this city and at Portland, Me., has in a greater or less measure saved the situation for the New England paper manufacturers. Prices paid for the British coal have taken a decided drop within the past week and paper manufacturers are paying $1 or more less than they did only a short time ago, many of them paying as low as $12 and $11 for the imported coal.

Paper Prices Advancing

The general advance in paper prices is the feature in the market. This situation holds true particularly in the paper board market, as New England mills are reported as being able to supply practically nothing in the board line because of being sold in advance practically up to their limit of productive capacity.

New England box makers, according to Boston merchants, are even obliged to purchase some stock from outside mills at as high a price as $60 delivered to their plants. Folding boards are even scarcer than chip and news grades, Boston merchants report.

The coal situation is one of the biggest propositions which the New England mills have to contend with, it is stated on good authority. Very few of the New England manufacturers are reported as having coal contracts for their winter supply and the majority of the manufacturers have to depend on the mercy of the dealers, buying their coal on the open market at the best price they can obtain. None of the mills have been forced to shut down as yet because of the shortage of coal and the low reserve fuel.

Waste Paper Prices Uncertain

Prices in the waste paper market are still uncertain, being rather on the rampage, owing in the main, probably, to the heavy buying on the part of the board mills who have been buying up supplies because of capacity production. Instead of the prices of between $13 and $15 which were quoted for folded news and mixed paper less than ten weeks ago the price here has jumped to between $22 and $25 at the high peak for the various grades. And even other grades of waste paper have jumped way up, following the lead already established. Boston merchants report that old kraft has been quoted and even sold at as high as $2.40 with book stock as high as $3 and hard shavings at virtually the price of bleached sulphite, which has been quoted at $4.35 by the mills, f. o. b. at the mills.

Paper Imports Increasing

Imports to the local market are increasing because of the present conditions. Receipt of 745 rolls of news print from Hamburg were reported recently as well as nearly nineteen thousand bales of various grades of pulp from Scandinavian mills and 1,200 bales of kraft from the same country.

Exports from the local market worthy of mention, according to Boston merchants, include nearly eight hundred packages of news consigned to a firm in Havana as well as a large quantity of paper bags and other containers made of paper. New England dealers and Boston merchants are putting themselves out to keep up the development already started in the South American market by the paper merchants of this section.

New Dillon Jordan

The newest piece of machinery manufactured by the Dillon Machine Company of Lawrence is the Dillon Jordan, which so far has proved a big success, and the firm reports encouraging orders. The machine comes in three sizes and either belt or direct connected motor driven. The firm, which has built paper machinery for years and is well known throughout the paper trade, has made all the bearings on its latest self-oiling, water-cooled and adjustable, and have fitted it with special heat treated steel-bronze or manganese steel plug and shell lining and standard steel knives.

A large stock of rebuilt paper mill machinery, including pumps and calender, press and couch rolls, are offered to the mills by the Frank H. Davis Company, whose plant is at 175 Richdale avenue, Cambridge. Included in the lot are tissue machines, sheet cutters, rotary boilers, slitters and winders.

Calcasieu Paper Co. to Erect Mill in Louisiana

ELIZABETH, La., September 25, 1922.—The Calcasieu Paper Manufacturing Company is to erect a paper mill here. Headed by R. M. Hallowell, the moving spirit of this community and president and general manager of the Industrial Lumber Company, with its three great sawmill plants, the capital stock of the new paper company, to be capitalized at $250,000, has been enthusiastically subscribed to and building of the paper mill plant will be begun soon with the hope of having it in operation soon after the first of the year.

The Calcasieu Paper Manufacturing Company will do something that no other paper making plant has done. It will make kraft pulp out of pine stumps and clear the land as it goes for the farmer to come after. The Carter process, a new process of recovering resin and turpentine and making paper from the fiber remaining, the discovery of J. F. Carter, has been adopted by the Calcasieu Paper Manufacturing Company. It is a modified soda process, and the experiments made to date at Elizabeth, covering over two years of tests, have been uniformly successful and gratifying. The turpentine realized by this process is identical, as far as can be discovered, with the true spirit of turpentine. The resin is in liquid form, which can be sold to paper mills for sizing paper and to soap manufacturers who use it in the manufacture of soaps instead of using solid resin. In fact, when solid resin is bought for this purpose it is necessary to reduce it to the same liquid form as produced in the Carter process.

These two products, the resin and turpentine, are obtained by the Carter process from crushed woods, leaving kraft pulp. It is now the intention of the company management to install a tissue paper unit with a capacity of ten to twelve tons a day, for which a ready market can be realized.

Mr. Hallowell hopes and believes that the Calcasieu Paper Manufacturing Company will be but the first of probably several paper mills located at Elizabeth, for around this community is land and stumpage enough to perpetuate from two to a dozen paper mills.

The directors of the Calcasieu Paper Manufacturing Company are: J. F. Carter, O. A. Trolich, S. M. Lee, C. H. Fenstermaker, O. D. Keller, B. F. Smith and R. M. Hallowell, all of Elizabeth, and C. W. Patterson and S. M. Scott, of Oakdale.

Maine Box & Paper Co. in New Quarters

[FROM OUR REGULAR CORRESPONDENT.]

LEWISTON, Me., September 25, 1922.—The Maine Box and Paper Company, has moved into its new factory at Stevens Mills, Auburn.

Established 1886

Results

If we achieve ideal results on our contracts, it is not because we possess any secret formulae for success, but rather that long study of all the problems involved and actual practice in solving them have given us a gold mine of experience which we can apply to each new problem as it comes along.

M. GOTTESMAN & COMPANY

INCORPORATED

18 East 41st Street

New York, N. Y.
U. S. A.

HOLYOKE OFFICE
185 Pine Street

KALAMAZOO OFFICE
No. 1 Humphrey Block

STOCKHOLM OFFICE
Stureplan, 13

XUM

CONDITIONS IN THE GERMAN PAPER MARKET

[FROM OUR REGULAR CORRESPONDENT]

BERLIN, Germany, September 1, 1922.—The dollar rises from hour to hour and has been bought today with 2,000 marks. The prices of all commodities are swiftly climbing after it. In recent days the manufacturers of the different varieties of paper hold their meetings in Berlin and fix the prices for September. The new prices have not yet been published, but it is rumored that they will almost double. This would be a surprise to the customers, who were prepared for a rise of 40 to 50 per cent only. The rise may be justified by the higher costs of production, but it would have the effect of restricting the home consumption. The cost of living is more than a hundred times higher than before the war, is daily rising, and nobody's income has risen in the same proportion. And as the average German can hardly buy the necessary food for himself and his family, he must economize in all other directions.

Mill Orders Have Not Diminished

Yet, until now, the orders for paper at the mills have not perceptibly diminished; almost all of the paper mills have orders up to the end of the year. But this heavy buying has its principal source in speculation. Every jobber and converter knows that the paper wanted by him will in the next month cost considerably more than today, as the cost of production of the mills must always rise under conditions like the present. Therefore everybody orders as much as he can, and many an individual orders more than he can promptly pay for after receipt. The mills know that and look with some distrust upon their home orders. The mills which wish to retain their old customers make them the concession that they are free to cancel the order if they find the price fixed for a new month is too high. Besides this a new trade custom established between the paper manufacturers and their customers gives the latter ones the right of cancelling whenever the new price exceeds the old one by 40 per cent or more. There exists also a general scarcity of money, and the bankers have very sensibly restricted credits.

Other Industries Require Much Paper

On the other hand all industries are busy and require their regular quantities of tissue and wrapping paper as well as of boards. It is astonishing that also the publishers want almost as much paper as in better times. A good observer among our paper manufacturers believes to have found the reason of it: the working people have turned to be the heaviest book buyers. The newly established Republic with its democratic rules allows them to reach high positions, and they know that they require knowledge if they wish to be prominent, so they buy good books for themselves and their sons. Popular editions of the German classics and popular scientific books have never before appeared in so many copies as now. On the contrary the sale of highly scientific books and of the big dailies has diminished, as the cultivated middle class, their chief buyers, can no more afford to pay for them.

Look After Export Business

These conditions influence the paper manufacturers to look after the export business, the more so, as the world market for paper seems to have strengthened lately, the Scandinavians having apparently ceased to sell paper and pulp without profit. But the export business is by no means an easy one, and now the government plans to raise the export tax against the opposition of the whole German industry.

Thus the market is uncertain in many points, and everybody in the paper business as well as Germany itself, must struggle for existence from one day to the other, mainly in consequence of the breakdown of the mark, caused by the impossible reparation demands of the French and the high costs of the occupying army.

Big Advance in Sulphite

The manufacturers of sulphite pulp will, as they say, raise the price of their products by 150 to 200 per cent, as they must buy the greater part of their pulpwood from foreign countries, because a large portion of the German forests is wanted for the French reparations. The pulpwood from Bohemia has to be paid in the rather high Czechoslovakian exchange, and the pulpwood from Poland in English pounds. In consequence of this rise of the sulphite all papers must rise proportionally. The newspaper mills ask 70 marks for the kilogram of news, that is about three times the August price and 350 times the price before the war. A meeting of the pulp and paper makers and the publishers under the government's auspices will fix the price of newspaper, while the September price of all other papers will be fixed by the paper manufacturers alone later on. They have adjourned their meetings.

News of the Chicago Trade

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, September 25, 1922.—McLaurin-Jones Company, of Brookfield, Mass., has issued through Peabody, Houghteling & Co., Chicago, first mortgage 7 per cent serial gold bonds dated September 1, 1922, redeemable in reverse order at 107½ during the first year and at a premium of ½ of 1 per cent each year following. The company manufactures gummed and coated papers.

W. J. DuBois, of the Moser Paper Company, Plymouth Court and Harrison street, has left the hospital and returned to his home at Oak Park. Mr. DuBois entered the hospital several weeks ago for an appendix operation.

"Bob" Butterworth, manager of the Champion Coated Paper Company, West Washington street, left September 25 to call on the trade in Kansas City and the southeastern section. "Bob" played some golf at Excelsior Springs during his trip and expected to set a record score for the season.

A number of Chicago jobbers are arranging for a meeting of golf enthusiasts that are to be entertained at Milwaukee by the jobbers of that city.

R. B. Little, formerly vice-president of the Dwight Brothers Paper Company and now vice-president and general manager of the new office of Bermingham, Little, Prosser Company, at Kansas City, and "Joe" Bermingham, of Kalamazoo, Mich., left for Kansas City, September 20, to arrange the office of the new company. All the stock has been received in Kansas City and the Chicago office of Bermingham & Prosser reports that the new branch will soon be ready for business.

J. H. Coy of the Flambeau Paper Company announces that business is gradually growing better and the last two weeks have developed good returns. Mr. Coy believes that business in general will be more stable when the strike conditions are settled.

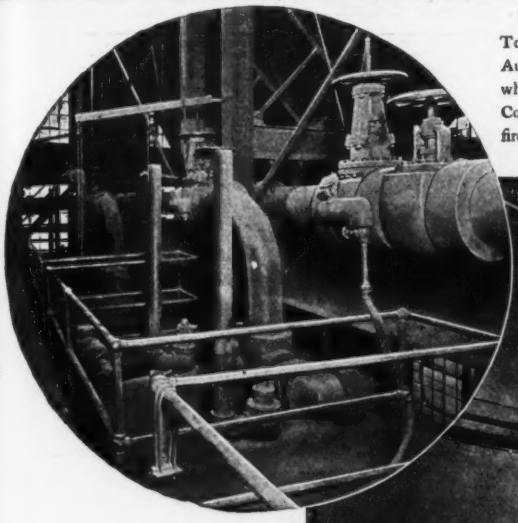
H. G. Prosser, of the Bermingham Prosser Company, 10 South LaSalle street, has been transacting business and estimating conditions at Kalamazoo, Mich., during the past week.

Miss N. M. Ingham, saleswoman of Bermingham & Prosser and who has been with the company since the organization started, is spending a month's vacation at her home in Farmington Falls, Me.

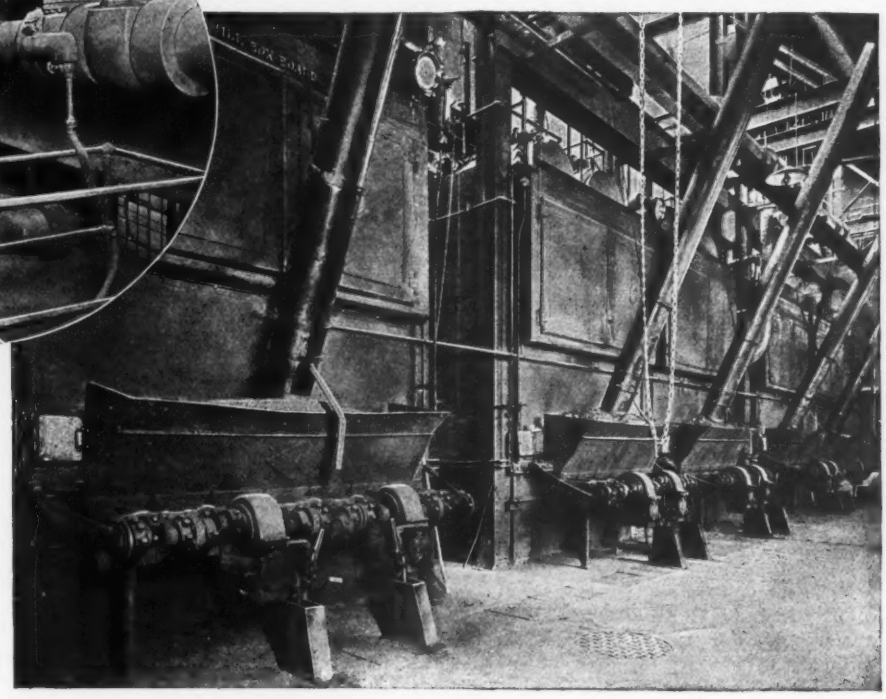
The Schmidt & Ault Paper Company, 111 Washington street, gives notice that the shipments have been arriving with considerably more regularity.

To Manage Seaman Buffalo Branch

BUFFALO, N. Y., September 25, 1922.—K. C. Franklin has been appointed Buffalo Manager for the Seaman Paper Company to take place of E. W. Butt, resigned. Mr. Franklin has been salesman for the Buffalo Branch of this Company for the past five years.



Top view of boiler and steam connections. Automatic valves admit steam to the main line when it builds up above a predetermined pressure. Conversely, when the pressure falls due to banked fires, the valves cut off the boiler.



Five 518-b. hp. HEINE H-Type Boilers operating at 125 pounds steam pressure, furnish power, heat and steam for processing. Crushed bituminous coal is fed to Riley underfeed stokers.

Another modern plant installs HEINE Boilers

THE Haverhill plant of the Robert Gair Company, where paper and box-wood are made, uses steam for power and heating.

Five 518-b.hp. HEINE H-Type Boilers have been operating there for five years and in a satisfactory manner. The three top and three bottom rows of tubes are washed every five weeks and all tubes twice a year. This has been found to be good practice and the tubes are in excellent condition.

Clean heating surface means long boiler life and better fuel economy. How often to clean a boiler depends upon local conditions of fuel and water.

HEINE *Advantages*

A feature of HEINE H-Type construction is the convenience of cleaning. Soot and dust are blown from tubes by a series of steam nozzles provided with every boiler. A number of tubes can be washed out by the removal of only one hand-hold plate. Ability to clean from the ends characterizes HEINE H-Type installations. It is possible to erect a solid bank of boilers without alleys between them. HEINE Boilers are the natural choice for industries seeking performance with economy.

Heine Boiler Company

SAINT LOUIS, U.S.A.

XUM

Obituary

Allen A. Wheat

KALAMAZOO, Mich., September 23, 1922.—Allen A. Wheat, one of the best known papermakers in America, died at Petoskey, Mich., where he was acting as manager of the Northern Michigan Pulp Company. He has been in poor health for two or three years, being forced to take protracted rests at various periods. He has been showing improvement lately and only the day before his death attended the review of a Knights Templar drill squad.

Mr. Wheat began his career in the paper industry with the Agawam Paper Company, Mittenague, Mass. He resigned the superintendancy of that concern to accept a similar job with the Sterling Paper Company, near Hamilton, Ohio. After a year in the Miami valley he returned to Mittenague and superintended the construction of the first unit of the Strathmore Paper Company. He spent about six years with that concern.

He then came to Kalamazoo as general superintendent of the Kalamazoo Paper Company, also spending six years with that concern. He then formed the Wheat Paper Company, at Elkhart, Ind., and served as manager until the plant was taken over by the Lincoln Paper Company. He then became associated with the Northern Michigan Pulp Company, a position he has since held.

Mr. Wheat was a Mason and Odd Fellow and actively interested in educational matters while a resident of Kalamazoo. He is survived by his widow and three sons. The funeral took place in Kalamazoo. The pall bearers were his former business associates.

John H. de Morainville

KALAMAZOO, Mich, September 23, 1922.—John H. de Morainville, 39 years old and secretary treasurer of the Hoskins-Morainville Paper Company, Menominee, Mich., is dead. He was a victim of pneumonia.

Congratulate Mr. Harding on Bonus Veto

Inasmuch as the members of the American Paper and Pulp Association had indicated by a referendum vote some time ago their opposition to the soldier bonus as an uneconomic move, Dr. Hugh P. Baker, executive secretary of the association, as soon as he knew that President Harding had vetoed the bill, sent to the Senators of the paper-making states a telegram asking them to uphold the veto. His telegram was as follows:

"American Paper and Pulp Association, representing paper manufacturers from Maine to California, believe that President Harding has taken an absolutely sound stand in his message vetoing the bonus bill. Manufacturers are already carrying a tremendous burden with the increasing prices of raw materials and promise of increased labor costs. We urge that you sustain the President's veto."

Dr. Baker, who was himself a soldier, being a captain of infantry, also sent a telegram of congratulation to President Harding, as follows:

"Manufacturers of paper throughout the country, represented in the American Paper and Pulp Association, congratulate you on your veto of the bonus bill. We believe the position you have taken is absolutely sound and for the benefit of the business interests of the country."

To Stabilize Coal Situation

WASHINGTON, D. C., September 25, 1922.—The Chamber of Commerce of the United States set in motion last week plans under which American business and industry, co-operating with the Government, will attempt to stabilize the coal situation.

The Chamber's efforts in this direction follow the coal conference of last week, called by Secretary Hoover, at which Mr. Hoover and the organizations represented at the conference, requested the Chamber to undertake responsibility for a definite campaign looking to a solution of the present coal problem.

The program of the Chamber contemplates co-operation on the part of national business associations, local chambers of commerce and individual corporations and firms in an attempt to equalize and expedite the distribution of coal and to prevent prices from soaring to undue levels. The railroads have assured Mr. Hoover that they will do their part by hastening transportation.

Full co-operation by all concerned the Chamber declares will relieve the federal and state governments of increasing regulatory legislation; and will be welcomed by the Administration as offering a promise that business itself will solve its problems without injection of government into its affairs.

John J. Dooley Appointed Traffic Manager

HOLYOKE, Mass., September 25, 1922.—The American Writing Paper Company has just made a well-deserved promotion in appointing John J. Dooley manager of its traffic department.

Mr. Dooley has been with the company since October, 1917, beginning as rate clerk in the traffic department, and subsequently becoming assistant traffic manager. His promotion is a just recognition of loyal and efficient service, and is in accordance with the company's policy to advance its own employees rather than to bring in men from other organizations.

Mr. Dooley's seventeen years' experience in railroad freight work, his wide knowledge of methods and schedules of the railroads and other channels of transportation throughout the whole United States and the high esteem in which he is held by the representatives of the railroads, combined with his special training in handling paper shipments, eminently fit him for the responsible position he now holds.

Mr. Dooley began his railroad career with the Boston & Maine Railroad in 1900 and worked at Springfield and other stations as telegraph operator, clerk and towerman. He was transferred to Holyoke in August, 1910, and continued his service with the Boston & Maine until 1917, when he joined the office forces of the big paper manufacturing organization.

What a Planted Forest Should Yield

GRAND MERE, P. Q., Canada, September 21, 1922.

Editor PAPER TRADE JOURNAL:

On page 18 of your issue for September 7 you have quoted me as saying that a planted forest should yield 75 cords to the acre. I wish that you would correct this statement, which I never made and which, without qualification as to the time of rotation, would seem absurd, and would have the effect of discouraging reforestation.

On a 40 year rotation, 250 square miles should yield 100,000 cords of pulpwood annually if cut clean and replanted. This would be at the rate of 30 cords per acre if cut clean; thinnings are not taken into consideration.

The paragraph referred to is in column two on page 18, and is headed "What a Planted Forest Can Do," and goes on to say that "the Chief Forester of the Laurentide Company estimates, etc."

Yours very truly,

ELLWOOD WILSON,

Manager, Forestry Division, Laurentide Company, Limited.

No Dumping of Wall Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 25, 1922.—The Customs Service in answering the complaint regarding the dumping of wall paper in the United States from Canada has made an investigation and found that there is no dumping of this commodity on the American market.

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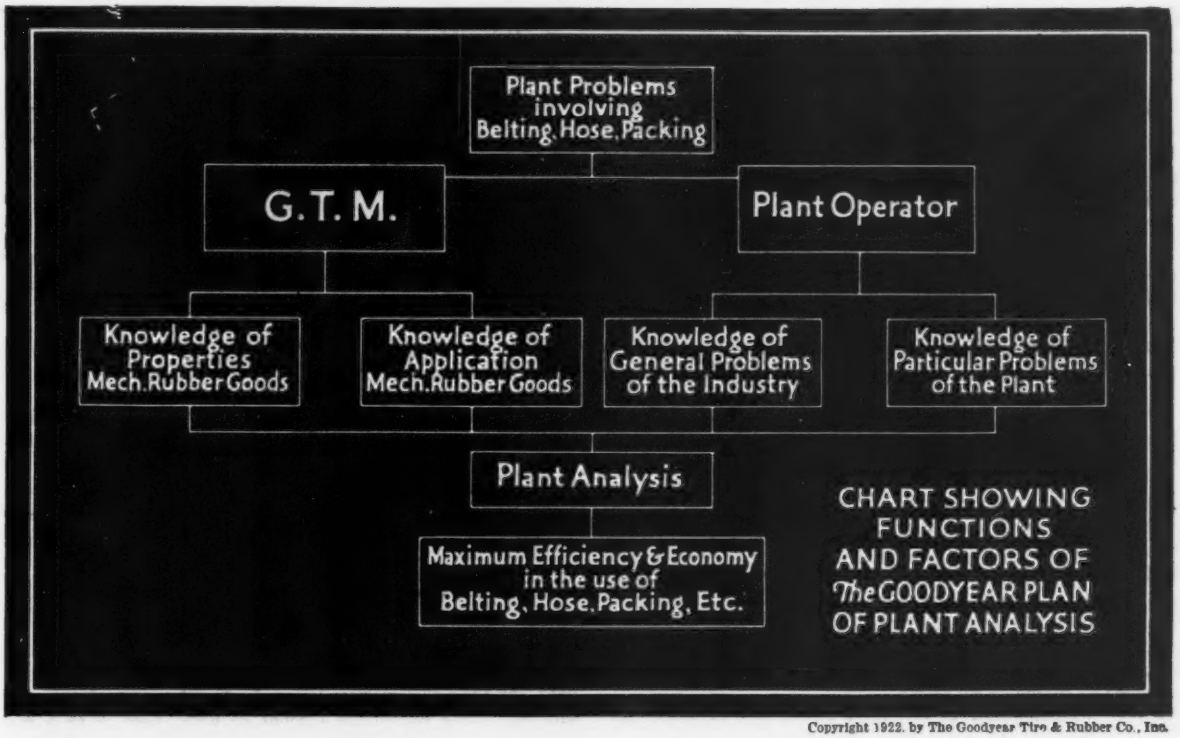

Plant Problems involving Belting, Hose, Packing
G. T. M.
Plant Operator
Knowledge of Properties Mech. Rubber Goods
Knowledge of Application Mech. Rubber Goods
Knowledge of General Problems of the Industry
Knowledge of Particular Problems of the Plant
Plant Analysis
Maximum Efficiency & Economy in the use of Belting, Hose, Packing, Etc.
CHART SHOWING FUNCTIONS AND FACTORS OF The GOODYEAR PLAN OF PLANT ANALYSIS

Copyright 1922, by The Goodyear Tire & Rubber Co., Inc.

Plant Analysis Service — and the G. T. M.

Look at this chart. It pictures, in the language of the plant superintendent and the industrial engineer, the place occupied by the G. T. M.—Goodyear Technical Man—with relation to your belting, hose and packing problems.

It identifies the G. T. M. for what he is, the tested link in the chain of service connecting your need for efficient plant operation, and your knowledge of the special working conditions of your plant, with the Goodyear Plan of Plant Analysis and the products Goodyear makes for industrial use.

The G. T. M. is an expert in his line. He knows the properties of good mechanical goods. He is trained in the science of their specification and application. His work takes him into many plants, in many industries, so that he is familiar with most transmission and conveying problems, and is a practical authority on many of them.

When he comes to your plant, he comes as a friendly analyst of your operating problems, your troubles, maybe. He doesn't pretend to know it all. He takes the advice of your superintendent and engineer. He gives close attention to their experienced knowledge of your particular working conditions.

His sole object is to fit what he knows about belting, hose or packing to the demonstrated conditions of service in your plant. If he can find out what you need, and Goodyear can furnish it, he will recommend it to you, and after its installation he will follow it up with a sincere service.

Isn't it logical that a belt, or other equipment, that is constructed right in the first place, and then is specified intelligently to the work it is to do, is much more likely than any other product is to serve you longer and better, with freedom from trouble, and return to you the full value of its utmost efficiency and economy? The Goodyear Analysis Plan is based on that reasoning, and the G. T. M.'s work is to insure that you get the equipment that will serve you longest and best.

There is a G. T. M. in your neighborhood. Call on him for an analysis of your mechanical goods problem, whether it involves a single unit or an entire plant, a conveyor or a transmission, a hose or a packing equipment. For further information about the G. T. M., and his work, or the kind of service Goodyear products give in your particular industry, write to Goodyear, Akron, Ohio, or Los Angeles, California.

GOODYEAR

Recent Incorporations

EASTERN STATES PAPER SALES CORPORATION, Manhattan, New York. Capital $5,000. Incorporators, C. A. Rood, J. A. Byrne, D. P. Bergheimer. Attorneys, Ingraham, Sheehan & Moran, 14 Wall street.

TIDEWATER PAPER MILLS SALES CORPORATION, Manhattan, New York. Capital $200,000. Incorporators, J. P. Shea, J. H. Kanna, M. J. Pfeffer. Attorney, J. A. Brady, 33 West 42d street.

THE SENECA MILLS PAPER COMPANY, Cleveland, Ohio, Capital $10,000. Incorporators, Anthony F. Caughan, R. E. Collins, T. A. Gillespie, E. E. Thomas and Patrick J. Collins.

OSWEGATCHIE PAPER COMPANY, INC., Gouverneur, New York.—Paper goods and all kinds of paper. Capital $200,000. Incorporator, E. B. Sterling, 140 Clinton street, Watertown.

Laurentide's Annual Meeting

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 25, 1922.—The annual meeting of the Laurentide Company was held here during the week. The report to the shareholders, a summary of which has already been published in these columns, was unanimously adopted and the board of directors of the Laurentide Company were re-elected, F. E. McNally, assistant secretary, being chosen to fill the vacancy created by the death of R. B. Angus. George Chahoon, Jr., president, was chairman. Owners of upwards of 153,000 shares were represented in person or by proxy.

Speaking of conditions in the pulp and paper industry, Mr. Chahoon said that the situation had been established to a large degree and that losses due to deflection had been balanced by suitable measures. The outlook for the industry was therefore good.

The loss of the company, through the death of R. B. Angus, its oldest director, was commented upon and an expression of sympathy was extended to the family of the deceased.

The directors present were Mr. Chahoon, F. A. Sabbaton, George H. Montgomery, K. C., C. R. Hosmer and Edwin Hanson.

After the Laurentide meeting, interesting statements were made by F. A. Sabbaton, vice-president of the Laurentide Power Company, with reference to the workings of that company, of which the Laurentide Company is a shareholder to the extent of $7,200,000. Mr. Sabbaton stated that they have, at times, turned in an effective 165,000 horsepower, and that they were turning back into the Laurentide Company's electric boilers, which had been recently installed, power that meant a saving to the paper company of some 5,000 tons of coal per month. It must, of course, be understood that this excess power is only available for this purpose owing to the fact that there is not at the present time a commercial market, otherwise it could not be profitably used in competition with coal. The Laurentide Power Company has been receiving payment since the first of July for 125,000 horsepower on its various contracts.

Plans for Woodlands Section Meeting

A special effort to secure the attendance of western and middle western States paper mill foresters at the Paper Week convention in Chicago, October 17, is being made by the Woodlands Section of the American Paper and Pulp Association the woodsmen's department of the organized paper industry.

Local problems of the lake States, in addition to general forestry problems faced by paper and pulp mill timber land operators will be featured at the convention, and the pulp manufacturers will doubtless be well represented at the convention.

Among the subjects for discussion will be the following:

1. Buying pulpwood by grades or specifications.
2. Proposed educational tractor demonstration test.
3. Formation of a western division of the Woodlands Section.
4. Pulp and pulpwood statistics.
5. Local woods operation problems.
6. Advisability of purchasing rough or peeled hemlock.

The Woodlands Section convention will be held the same day the Salesmen of the industry have their big meeting, and these two sessions, together with the meetings of several of the groups of manufacturers, such as the Book Paper Manufacturers, will mark the opening of the fourth fall conference of the paper industry held each year at Chicago. The convention sessions will be at the Drake Hotel, and the railroad rate of one and a half fare under the certificate plan is available to the Woodlands Section visitors, as well as to those attending the salesmen's and other association meetings.

News of the Wisconsin Trade

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., September 25, 1922.—Despite the repeated charge that investors are seeking tax exempt federal and municipal bonds to the detriment of industrial issues, the Marathon Paper Mills Company, of Wausau, disposed of $1,450,000 worth of bonds—the entire issue—within 36 hours. The company offered the issue on Wednesday through a Milwaukee trust company and on Thursday noon—before the circulars had reached the bond salesmen or the bond buying public—every bond had been sold.

The company will use the proceeds to retire floating indebtedness and for increased working capital.

Water power this year has been more abundant than in many years and consequently most Wisconsin paper mill manufacturers have had their fuel worries lessened. In other years it was necessary to greatly curtail the amount of water used, with a consequent increase in coal consumption, but this summer and fall all the mills in the Fox river valley were able to use all the water that was necessary. In fact it has been necessary to open some of the sluice gates in the river—an unprecedented situation.

Reports from Wisconsin Rapids indicate the heavy rainfall has assured a plentiful supply of water and as a result larger paper mill operations have been possible, giving employment to more men.

Gilbert Mericle has resigned as superintendent of the George A. Whiting Paper Company at Menasha to become superintendent of an American Writing Paper Company mill at Holyoke, Mass. Mr. Mericle was given a farewell party by 60 employees of the Menasha company prior to his departure. His friends presented him with a gold watch and chain.

Strathmore Dealers Meet at Woronoco

WORONOCO, Mass., September 25, 1922.—The Strathmore Paper Company held a two-days' national convention for all dealers of Strathmore products Monday and Tuesday of last week. There was an attendance of nearly 100, many States being represented. The weather was everything that could be desired when the party were entertained to a steak roast at Woronoco heights Monday noon, followed by a business session in Memorial Hall. H. A. Moses, president of the Strathmore Paper Company, presided, and spoke at some length on the remarkable development of the paper industry. In the evening the party was entertained by Mr. Moses and other directors of the company at the horse show on the Eastern States exposition grounds. Tuesday morning at 10 o'clock another business session was held in Memorial Hall, after which the entire company motored to Woronoco park, where a regular clam-bake and sports were held.

Thompson & Norris Co. Suffers Fire Loss

BROOKVILLE, Ind., September 23, 1922.—Lightning struck the large straw shed of the Thompson & Norris Company, on Tuesday night destroying the shed and 30,000 tons of straw. While the fire burned for two days it was kept under control and no damage was done to the mill which is running at full capacity.

COLUMBIAN

Tape — Marked

PURE MANILA ROPE

EVERY FOOT OF THIS ROPE IS ABSOLUTELY GUARANTEED BY A RED, WHITE AND BLUE "TAPE-MARKER" WHICH CAN BE FOUND THROUGHOUT ITS ENTIRE LENGTH.

For Every Purpose

Whether for construction, transmission, hoisting, rigging, or the countless other purposes to which Manila Rope is put, there is a Columbian *Tape-Marked* Pure Manila Rope of the correct size and "lay."

All sizes, in both three and four strand, can be quickly identified by locating the red, white and blue *Tape-Marker* in the manner shown above. This Marker is continuous throughout the length of the rope, and bears the words "Guaranteed Rope," certified by the manufacturer's signature—"Columbian Rope Co." immediately beneath.

JOBBERS and DEALERS:- It pays to handle Cordage with such a tangible guarantee from the maker to the jobber, dealer, and consumer. Write today for price-list, catalog, and *your* copy of the folder "How Columbian *Tape-Marked* Pure Manila Rope is Made."

By Invitation Member

Emblem of BUSINESS CHARACTER

Rice Leaders of the World Association

Represents High Standing in NAME-PRODUCT-POLICY

COLUMBIAN ROPE CO. AUBURN, N.Y.

New York Trade Jottings

Halvar Lundberg, an efficiency expert, who has recently been promoting sulphite mill operating efficiency in Wisconsin, was among the New York trade visitors of the past week.

* * *

A. H. Nevius, vice-president and general manager of the Miami Paper Company, West Carrollton, Ohio, stopped over in New York Tuesday of this week on his way back home after the Washington paper conference.

* * *

C. A. Crocker, president of the Chemical Paper Manufacturing Company and president of the Crocker-McElwain Company, was in New York last Thursday to attend the meeting of the National Industrial Conference Board, where he is one of the representatives of the paper industry.

* * *

W. J. Raybold, of the B. D. Rising Paper Company, Housatonic, Mass., and president of the American Paper and Pulp Association, passed through New York Monday of this week on his way back to Massachusetts after having attended the recent paper standardization conference at Washington.

* * *

George W. Sisson, Jr., president of the Racquette River Paper Company, of Potsdam, N. Y., and former president of the American Paper and Pulp Association, returned last week on the steamer *Celtic* after a several months' tour of Finland, Norway and Sweden as well as the chief paper and pulp manufacturing cities of Europe.

* * *

Among other New York men who attended the Paper Meeting of the A. S. M. E. Regional Convention, held at Springfield, Mass., of which George E. Williamson, president of the Technical Association, was chairman, were: J. O. Ross, of the J. O. Ross Engineering Company; George D. Bearce, of the News Print Service Bureau, and Mr. Bailey of the Bailey Meter Company.

* * *

Stewart Seaman, who has had a large part in developing the use of cotton linters as a paper making material, has become associated with Procter & Gamble Distributing Company, of Cincinnati, which company is engaged in the production of linters. Mr. Seaman, who was formerly with the Stamsocott Company of Hopewell, Va., was in New York Wednesday of last week.

* * *

The Metropolitan Bag and Paper Jobbers' Association, Inc., an organization of the Metropolitan District of New York city, at its annual meeting—held at the Hotel St. George, Brooklyn, N. Y., recently elected the following officers for the ensuing year: Heberlein, L. H., president; Tuthill, Harry, of Tompkins & Tuthill, vice-president; Berger, J. M., of the Forbes Paper Company, treasurer; Wolf, A. T., of A. & L. Wolf, Inc., secretary. The address of the secretary is, 256 E. 138th street, New York city.

* * *

W. G. MacNaughton, secretary of the Technical Section of the Pulp and Paper Industry, returned to New York Tuesday of this week from a trip to Springfield, Mass., where he attended the regional meeting of the A. S. M. E. for the purpose of hearing the paper on "Steam Utilization in a Modern News Print Mill" by S. W. Slater and J. E. A. Warner, of the St. Maurice Paper Company, Madeleine, Quebec. This paper is reprinted in the Technical Section of this issue of the PAPER TRADE JOURNAL.

* * *

Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, and O. M. Porter, secretary of the Woodlands Section, were in Washington this Monday attending the meeting of the Advisory Committee of the Paper Industry to the Bureau of Standards Paper Section. They discussed the progress which is being made toward the standardization of paper, Dr. Baker remaining in Washington to take up the matter of the proposed Trade Association Manual, which the Department of Commerce is contemplating.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 27, 1922.—The purchasing officer of the Government Printing Office has received the following paper bids:

172,000 lbs. 38x48—86 White S. & S. C. Printing Paper: Dobler & Mudge at $.0775 per lb.; R. P. Andrews Paper Company, $.0719; Old Dominion Paper Company, $.08094; Bryant Paper Company, $.08; Kalamazoo Paper Company, $.0725; Samuel S. Alcorn, $.071, and Allied Paper Mills, $.075.

23,750 lbs. 29x41—50 White M. F. Printing Paper: Dobler & Mudge at $.075 per lb.; Old Dominion Paper Company, $.0852; International Paper Company, $.0785; Bryant Paper Company, $.075; Kalamazoo Paper Company, $.07 and D. L. Ward Company, $.075.

36,500 lbs. Binders' Board, various sizes: Republic Bag & Paper Co., $97.20 per ton; Mathers-Lamm Paper Cmpany, $87.70; R. P. Andrews Paper Co., $108.00; Kerr Paper Mill Company, $90.00; Whitaker Paper Company, $109.60; Doubler & Mudge, $89.25.

The purchasing officer of the Government Printing Office will open bids on October 6 for the following:

2,550 lbs. (100 reams) 17 x 28—25½ No. 20, Green Glazed Bond Paper.

4,472 lbs. (22 reams) 22½ x 28¾ White and Salmon Index Bristol Board.

The Government Printing Office will receive bids on October 4 for 172,000 pounds (2,000 reams) of 38 x 40—86 White S. and S. C. Printing Paper.

Crane & Co. have been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 1,000 sheets of 15 x 21—47 No. 56, Crane's artificial parchment paper at $.0567 per pound.

The purchasing officer of the Government Printing Office will open bids on September 29 for the following:

5,000 lbs. (100 reams) 25 x 38—50, No. 1 Salmon Machine Finish Printing Paper.

Find Bomb in Cellar of Paper Firm

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 25, 1922.—While cleaning a cellar at the Virginia Paper Company, 933 D street, northwest, Edward Gatewood, a colored porter, found concealed near the stairway leading to the cellar a suspicious looking round object. He wrapped it carefully in a gunny sack and took it to his home, 1215 Alton court, northwest, and later turned it over to Lieut. Beckert at the First precinct.

It was next taken to the office of Inspector C. L. Grant, who called in an expert on explosives from the United States arsenal, who reported that the object found by Gatewood was a time bomb, charged with a powerful explosive.

It was said that the bomb was set and timed for an explosion, but owing to the negligence of the person who placed the bomb in the cellar, the concussion cap was omitted, and so the bomb failed to explode at the time set. Police are making an investigation.

—Lockwood's Directory of the Paper and Allied Trades for 1923 has just been issued. Order now. Price $7.00.

The Bag That Commands Attention

The development of the Lawrence Bag and its resulting increase in sales have been due to intrinsic Quality—a quality that has been kept uniform. It's a bag that no buyer can overlook.

LAWRENCE GROCERS' BAGS

Improved Self-opening and Old-style Squares—each "family" the pinnacle of perfection because every detail under the direct supervision of **Grocers' Bag Specialists**—whose years of experience are reflected in every sack produced in our modern new plant.

James Lawrence, President

The Lawrence Bag Company

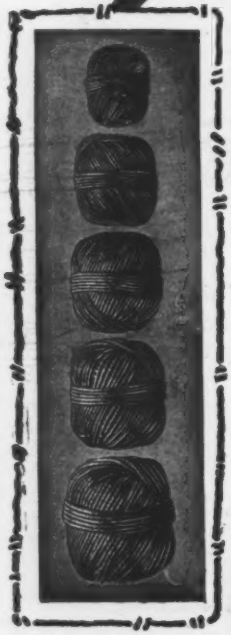
Miamisburg, Ohio

THE APPLETON MACHINE COMPANY

HORIZONTAL WOOD SPLITTERS
CENTRIFUGAL PUMPS
CYLINDER MOULDS
JORDAN ENGINES
WET MACHINES
FLAT SCREENS
AGITATORS
CHIPPERS
DECKERS
ROLLS

APPLETON WISCONSIN

"AMERICAN"



PAPER MAKERS TWINE TUBE ROPE
WALL PAPER TWINE HAY ROPE
FINE AND COARSE POLISHED TWINES
"AMERICAN" BRAND MANILA ROPE
"AMERICAN" BRAND TRANSMISSION ROPE

The name "AMERICAN" as applied to cordage means "more value in every way." Send for copy of our General Catalogue, Prices and samples. Address Department M.

Largest Makers of Commercial Twines and Rope in the World

AMERICAN MANUFACTURING CO.
NOBLE AND WEST STREETS, BROOKLYN, NEW YORK CITY

CORDAGE

Let Them Drink to your business health in cups you sell

each drink a cup—each cup a sale for you and at lowest cost of any cup on the market.

At such prices SALES RESISTANCE IS NEGLIGIBLE and our direct advertising assistance in your city will get immediate results as it is now doing in many cities.

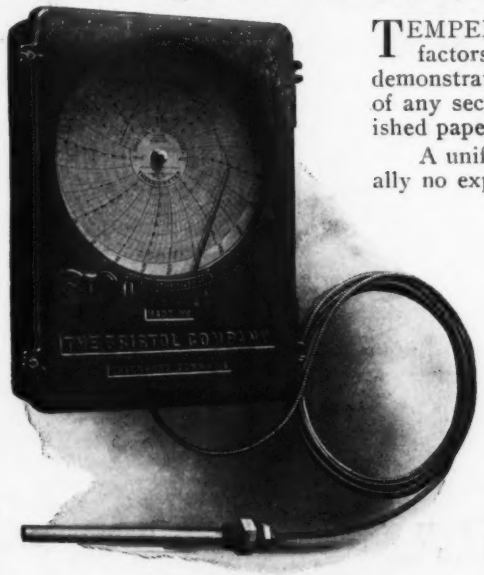
Burt's Paper Drinking Cups are made of fine white paper, without wax to make drinks taste, and are reinforced so holders are not necessary. They are kept under glass and cannot be wasted or soiled before use.

Cups retail at one fourth cent—dispensers at five dollars.

F. N. Burt Company, Ltd.
Paper Cup Division
Buffalo, N. Y.

THE QUALITY OF YOUR PRODUCT

Depends Upon the Uniformity of the Temperature in the Machine Room



TEMPERATURE control has always been one of the most annoying factors entering into the manufacture of paper. Experience has demonstrated that the slightest degree of variation in the temperature of any section of the machine room has affected the quality of the finished paper.

A uniform product is the desirable aim of every paper mill, and usually no expense is spared to achieve this result.

TRADE MARK
BRISTOL'S
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furnish an accurate means of knowing just the conditions surrounding the manufacture of your product. The charts supply a record of these conditions which are available for inspection at any time, and may be filed away for future reference and comparison.

Bristol's Instruments quickly pay for themselves in increased plant efficiency.

Bulletin BE-303 will tell you about the most extensive line of recording instruments in the world. May we send it to you?

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Missisquoi Pulp and Paper Company

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White and Tinted Bristols—White Blanks—Index Bristol and Specialties in Card Boards.

The Pulp and Paper Trading Co.

21 East 40th Street New York City

DEALERS IN DOMESTIC CHEMICAL AND MECHANICAL PULPS AND PAPER

AGENTS FOR

J. & J. Rogers Company, Ausable Forks, N. Y.
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Canadian Kraft Limited, Three Rivers, Canada
Dealers in Wayagamack Kraft Pulp
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EASTERN AGENTS of Sulphite Pulp.
Made by Port Huron Sulphite & Paper Co., Port Huron, Mich.

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Made of Toughest Close-grained Rock Maple. Special drilling insures maximum suction, prevents all fins.

Paper Roll Plugs, Beater Paddles, Drainer Bottoms, Cogs, Mill Spools and Drums, Trucks, Dollys, Broke and Stock Cars.

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PAPER MILL SUPPLIES FOR 36 YEARS

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BERLIN SW 11 (GERMANY)

Founded by Carl Hofman, 1876

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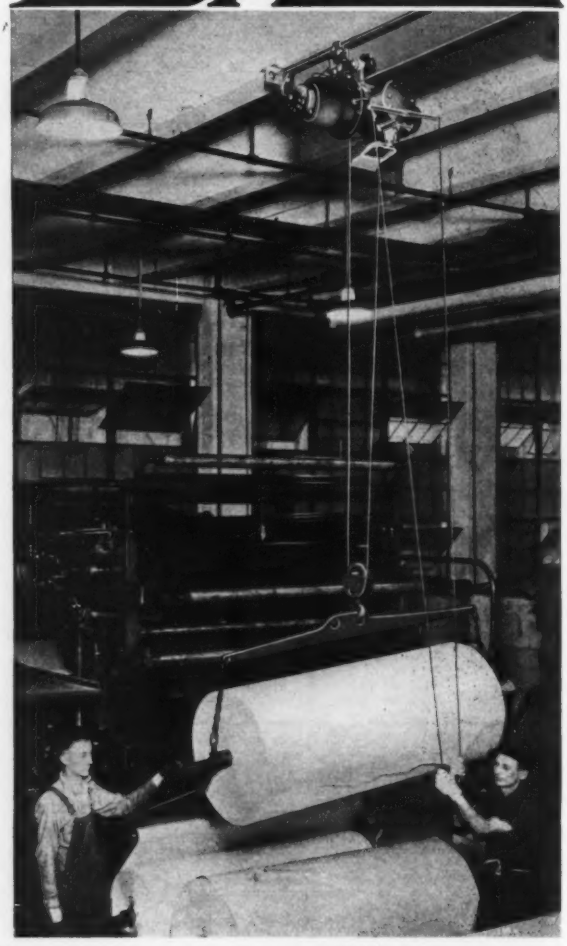
Covers the whole paper trade (paper making, transforming, stationery). More than 12,500 bonafide subscribers all over the world.

Subscription: 4 Dollars

THE SHEPARD ELECTRIC LIFTABOUT



Low cost handling of paper in rolls

Handling and transfer can be made a very negligible production cost with a *LiftAbout*.

Paper in rolls and in cases, and pulp are handled with ease, speed and economy by this new ½ and 1 ton electric hoist.

It is produced on a quantity production basis and is surprisingly low in price. Many paper mills and warehouses are using them.

Tell us your requirements

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Member Electric Hoist Mfrs.' Assn. 2289-S

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Dealers in All Grades of Paper

SPECIALISTS IN

BOOK PAPER, GLASSINE and EMBOSSED GLASSINE PAPERS

Exclusive Distributors for

WESTFIELD RIVER PAPER COMPANY
RUSSELL, MASS.

To Purchasing Agents:

AMONG PURCHASING AGENTS you have probably noticed this:

The Purchasing Agent who has grown into the habit of looking at things in their broad aspects, exercises an important influence on the conduct of his Company's affairs.

He does not stop at mere comparisons of prices. Rather, he includes in his inquiry complete information about the ultimate economy of *results*.

This ability to *see through* to results is a quality which the business world rates high.

Such a Purchasing Agent will ask himself:

"Does it pay my plant to impair its investment in expensive engines and machines by using oils which are cheap to buy, but costly to use?

"Do I know why certain lubricating oils increase power but do not increase costs?

"Do I know that my plant pays for good lubrication whether it gets it or not?

"Is it better to order 'oils' for my plant, or to buy a scientific lubrication service which includes oils?"

When a Vacuum Oil Company representative sends in his card, you need not expect a hum-drum interview with an "oil salesman." Instead you will have presented for your consideration a definite proposition for reducing operating costs.

We call this proposition a Lubrication Audit. See explanation in column at right.

As this is a matter of more far-reaching importance than the purchase

VACUUM OIL COMPANY

of a few barrels of oil—you may wish, from a technical standpoint, to check up with your Plant Engineer the probable advantages of this Lubrication Audit.

We will gladly supply you with more detailed information about the Lubrication Audit upon request. It is understood that such a request puts you under no obligation. Kindly address our nearest branch office.

The Lubrication Audit

Explained Step by Step in Condensed Outline

INSPECTION: A thoroughly experienced Vacuum Oil Company representative in co-operation with your plant engineer or superintendent makes a careful survey and record of your mechanical equipment and operating conditions.

RECOMMENDATIONS: We later specify, in a written report, the correct oil and correct application of the oil for the efficient and economical operation of each engine and machine. This report is based on:—

(1) The inspection of the machines in your plant.

(2) Your operating conditions.

(3) Our 56 years of lubricating experience with all types of mechanical equipment under all kinds of operating conditions throughout the world.

(4) Our outstanding experience in manufacturing oils for every lubricating need.

CHECKING: If, following our recommendation in this audit, you install our oils, periodical calls will be made to check up the continuance of the desired results.

FOR THE ABOVE FREE SERVICE address our nearest branch office.

Domestic Branches:

New York (*Main Office*)	Boston	Chicago	Philadelphia
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GARGOYLE

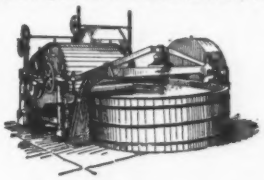
Lubricating Oils

A grade for each type of service

Lubrication Audit

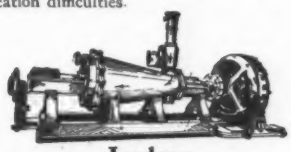
in the *Paper Industry*

would point out the Correct Lubrication for the important machines as follows:



Beaters

Beater bearings, generally unnecessarily hot, will run cooler if the stock leakage is eliminated and oiling is regularly attended to. The regular use of **Gargoyle D.T.E. Oil Extra Heavy** overcomes beater lubrication difficulties.



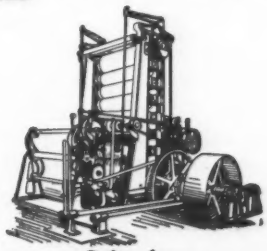
Jordans

Because of the high speeds and heavy pressures which are always present, and the side pull on bearings when belt driven, it is necessary to use a heavy bodied oil. For this purpose we recommend **Gargoyle D. T. E. Oil Extra Heavy.**

Paper Machines

For bearings of the paper machine, subjected to induced heat from steam used for drying, an extra heavy bodied oil is required such as **Gargoyle D. T. E. Oil Extra Heavy.**

The rolls at the wet end subjected to moisture and heavy pressure demand a compounded oil which will resist the washing tendency and maintain a perfect oil film. We recommend **Gargoyle Voco Engine Oil No. 1** for these specially trying conditions.



Calenders

Paper machine production is directly dependent upon uniform speed. Calender bearings are subjected to heavy pressures and high frictional heat. The regular application of **Gargoyle D. T. E. Oil Extra Heavy** insures uniform speed, and consequently minimizes "broke."

VACUUM OIL COMPANY

Editorial

Vol. LXXV New York, September 28, 1922 No. 13
FIFTY-FIRST YEAR

To Teach Paper Making

The Institute of Industrial and Domestic Arts, Gardenvale, P. Q., has just issued a handsome syllabus of its correspondence courses in the Department of Pulp and Paper Making. The courses outlined include elementary science, mechanical pulp, sulphite pulp, sulphate and soda pulp, beating and coloring, paper machine operation and paper finishing. Instruction in these courses is given under the authority of the Canadian Pulp and Paper Association, the committee for the supervision of correspondence education consisting of F. J. Campbell, manager of the Canada Paper Company, Limited; O. F. Bryant, and George Carruthers, president of the Interlake Tissue Mills, Limited.

The secretary of the institute and the principal of the faculty is J. Newell Stephenson, M. S. Mr. Stephenson is particularly well qualified for the position for which he has been selected. He was graduated from the Massachusetts Institute of Technology, after which he spent several years at the practical business of paper making, then joining the faculty of the paper and pulp making school of the University of Maine at Orono. After spending some years teaching paper making, he became editor of *The Pulp and Paper Magazine of Canada*. In connection with this latter work, which he continues, he is the editor-in-chief of the series of textbooks on the manufacture of pulp and paper being published by the Joint Vocational Educational Committee of the Paper Industry of the United States and Canada on which this correspondence course has been founded.

In addition to Mr. Stephenson, the faculty includes the following: John Jesse Clark, M. E., formerly dean, International Correspondence School, vice-principal, mathematics and mechanical science; Sinclair Laird, M. A., B. Ph., dean, Macdonald College, supervisor of preparatory courses; T. Linsey Crossley, B. S., chemistry and physics, testing of pulp, and director of extension service in education; P. E. Piche, B. A., C. E., M. E., translator and director of education in French language; Carleton John Lynde, Ph. D., professor of physics, Macdonald College, physics; William C. Greenough, B. S., co-author, "Electrical Engineers' Handbook," electricity; Rex W. Hovey, B. A., director service department, Abitibi Power and Paper Company, chemistry of wood; Harry J. Buncke, C. E., mechanical engineer, Abitibi Power and Paper Company, mechanical pulp; Bjarne Johnsen, Dr. Ing., chief chemist, Hammermill Paper Company, sulphite pulp; Arthur B. Larchar, S. B., superintendent, Penobscot Chemical Fiber Company, soda pulp; Henrik Grinstad, superintendent, Brompton Pulp and Paper Company, sulphate pulp; Hugo H. Hansen, S. B., chief chemist, Eastern Manufacturing Company, bleaching; E. C. Tucker, B. S., superintendent, Crocker-McElwain Paper Company, rag room operation; Edward T. A. Coughlin, B. Sc., Ch. E., superintendent, Monarch Paper Company, treatment of waste papers; Ernst Mahler, general superintendent, Kimberly-Clark Company, beater room practice; Judson A. DeCew, B. A. Sc., consulting paper technologist, rosin sizing; Kenneth T. King, expert in paper coloring, E. I. duPont de Nemours Company, coloring; George S. Witham, Sr., manager of mills, Union Bag and Paper Corp., news machines operation; George E. Williamson, executive engineer, Strathmore Paper Company, book and writing machines; A. O. Bowness, paper mill superintendent, E. B. Eddy Company, wrapping paper machines; L. M. Smith, assistant manager, Brompton Pulp and Paper Company, cylinder machines; H. R. Harrigan, production engineer, American Writing Paper Company, special machines; R. O. Harper, manager, B. D. Rising Paper Company, tub sizing; W. D. Sommerville, Eastern Manufacturing Company, paper finishing; Dard Hunter, paper specialist, hand-made papers; Clark Marion, Champion Coated Paper Company, paper coating; Fred A. Curtis, United States Bureau of Standards, paper testing, also a staff of specialists on general mill equipment.

As may be seen from the foregoing, the faculty is drawn from some of the most representative men in their lines in the industry of the United States and Canada. All of them have had much practical experience and hold responsible positions in the business.

There has been need for an institution of this kind in the industry for a long time, and the assertion may safely be ventured that the Department of Pulp and Paper Making of the Institute of Industrial and Domestic Arts will meet this need in every respect as prefectly as it is humanly possible to do. The PAPER TRADE JOURNAL takes great pleasure in recommending it unhesitatingly to the many young men in the industry, who cannot fail to profit from its instruction.

An Elastic Tariff

So much interest was taken in individual rates of the tariff bill as it was being framed by Congress that practically no attention was given to the greatly increased powers and duties of the United States Tariff Commission, which have become law under the new tariff act.

In the new tariff act, as is generally known, provisions have been made for what is termed an "elastic tariff." This authorizes the President to increase or decrease the duties as laid down by law and to shift to the American valuation system under certain conditions. This change, which must be authorized by the President by proclamation, and other changes which are allowable under the new law, can only be made after a thorough investigation by the Tariff Commission.

Investigations by the commission will be made along judicial lines and while it has not yet been definitely determined, it is believed that the commission will have hearings, and that these hearings will be opened to the public, along with arguments which will be made before the commission. It is understood that new laws of procedure are now being drawn up by officials of the commission in preparation for the enlarged work.

The appropriation for the Tariff Commission for the present fiscal year ending July 1, 1923, is $325,000, but an extra appropriation of $250,000 is being asked by the commission in order that the wishes of Congress may be carried out.

In the new law the President is also authorized to increase or decrease duties and to change classifications whenever necessary to equalize the ascertained differences in cost of production. No

duty, however, may be increased or decreased more than 50 per cent of the duty specified in the law. No authority is given the President to transfer any commodity from the dutiable list to the free list or vice versa, nor may any duty be changed from specific to ad valorem. The differences in costs of production are to be ascertained in the United States and in principal competing foreign countries. As the tariff bill originally passed the Houses of Congress, this function of the President was to have remained in effect only until July 1, 1923, but as the bill was reported from conference, and as it finally became law, this limitation was removed, so that as long as the present tariff bill remains law the President will retain this power unless it is later rescinded by a special act of Congress. Those who have followed this matter most closely are of the opinion that this is the first step toward taking tariff making out of the hands of Congress.

Under the new law and after an investigation by the Tariff Commission, the President is authorized to substitute American valuation for foreign valuation, whenever necessary to equalize ascertained differences in costs of production, under certain conditions and limitations. The law prescribes the factors which the President is to take into consideration in determining differences in costs of production, and further provides that investigations to assist the President in ascertaining such differences are to be made by the Tariff Commission.

The President is not authorized to increase rates beyond the specified maximum ad valorem rate fixed in any paragraph of the law.

The law also provides for unlawful, unfair methods of competition and unfair acts in the importation of merchandise into the United States which threaten the stability or existence of American industry. This is really an extension of the powers of the Federal Trade Commission which are given to the Tariff Commission. Investigations of cases arising under this provision of the law are to be made by the Tariff Commission, and its findings are subject to review on questions of law by the United States Court of Customs Appeals. The final findings of the commission are then transmitted to the President, and he is authorized in case such unfair methods or acts are established to his satisfaction, to impose additional duties upon merchandise imported in violation of the act and in extreme cases he is authorized to prohibit the offending person from importing any merchandise into the United States. The President is also given discretionary powers to impose additional duties or prohibition upon imports from any country discriminating against the overseas commerce of the United States.

In the bill as it became law the duties of the Tariff Commission are redefined and enlarged, but the original organic act, under which the commission was organized, remains unchanged.

Southern Cotton & Paper Co. Increases Stock

CHATTANOOGA, Tenn., September 25, 1922.—The Southern Cotton and Paper Company filed an application with the register last week for authority to amend its charter so as to increase the authorized capital stock from $200,000 to $300,000.

Since the organization of this company in the Fall of 1921, the entire original capital has been sold and the mill, including the pulp mill and the paper mill, has been completed. The plant is in Alton Park.

Plans for Paper Week in Chicago

Plans were formulated for the biggest convention yet held by the Salesmen's Association of the Paper Industry at a conference in New York, Wednesday evening, September 20, attended by leaders of the Chicago district, who are in direct charge of the arrangements, and Eastern officers of the Salemen's Association.

The Chicago salesmen will take charge of the social side of Paper Week in Chicago the week of October 16, and their own particular part of the program will be their convention on Tuesday, October 17. Those in attendance at the New York conference to plan the details were J. L. Fearing, vice-president for the Chicago district; F. P. Whiteley, chairman of the committee on arrangements for the fall convention; H. H. Reynolds, of Housatonic, Mass., president of the Salesmen's Association; J. Donald MacLaurin, vice-president of the New York district, and Dr. Hugh P. Baker, secretary of the national association.

The securing of former Governor Frank O. Lowden of Illinois, who was a leading candidate for the presidential nomination in 1920 until the sentiment crystalized on Mr. Harding, has been a notable success for the Chicago group. He will be one of the speakers of the evening banquet of the salesmen, which will be attended not only by members of the salesmen's organization but open also to paper mill executives. In fact, it was decided to make a special effort to secure a large attendance of paper mill executives, so that they can appreciate the work that is being done by their salesmen to improve the methods of marketing, as far as the paper industry is concerned.

The Chicago committee consists of fifteen salesmen, all of whom are assigned to special duties in connection with the convention, by a series of sub-committees. One group will arrange for the convention session, another for the banquet, and others for similar duties, while all are to serve as a general hospitality committee.

The speakers' committee has completed the list of after-dinner speakers for the banquet, for, in addition to Governor Lowden, Edgar Guest, the noted humorist, will give one of his characteristic addresses, and the chaplain, Dr. George Craig Stewart, will talk on the work of the salesmen and its relationship to the success of the American Paper and Pulp Association, of which the salesmen's organization is a part.

Inasmuch as the fall conference of the paper industry at Chicago does not include a formal banquet but a joint luncheon on Thursday between the manufacturers and the merchants, the salesmen are planning to make the Tuesday banquet the central social figure of the week. They are certain that there will be 500 in attendance, including the executives, and have changed the original plans to secure a larger room at the Drake Hotel than was at first assigned to make room for the larger attendance that is now anticipated.

The Chicago salesmen, Mr. Fearing said, before returning to Chicago, gave up their usual summer outing in order to concentrate on plans for the fall convention and banquet.

Consolidated Paper Co. Makes Machine Changes

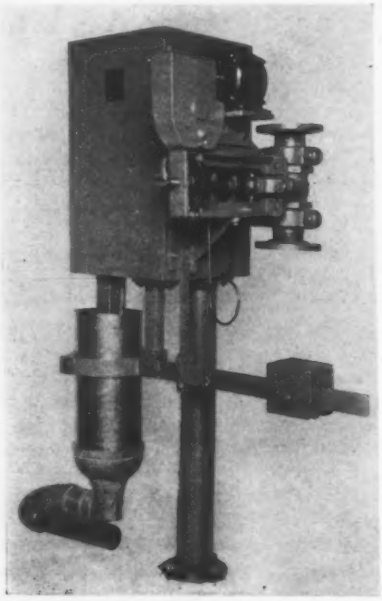
[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., September 25, 1922.—Important mechanical changes were made last week on the new high speed news print paper machine in the Wisconsin Rapids division mill of the Consolidated Water Power and Paper Company. The Fourdrinier was lowered from a 36-inch to a 16-inch pitch in order to obtain better running qualities and bring about a closer formation of the paper. It is said the change was in line with the best practice which experience has shown with other high speed machines. Papermill men, it is said, will watch the result of the change with considerable interest as the proper pitch of the wire has been an important problem in connection with high speed machines. The Beloit Iron Works, which built the machine, provided the new parts necessary for the change.

XUM

The Trimbey Automatic Consistency Regulator

(Patented)



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UNIFORM "brushing" action at the Jordan means improved quality.

More than 150 in use in the United States, Canada and Foreign Countries

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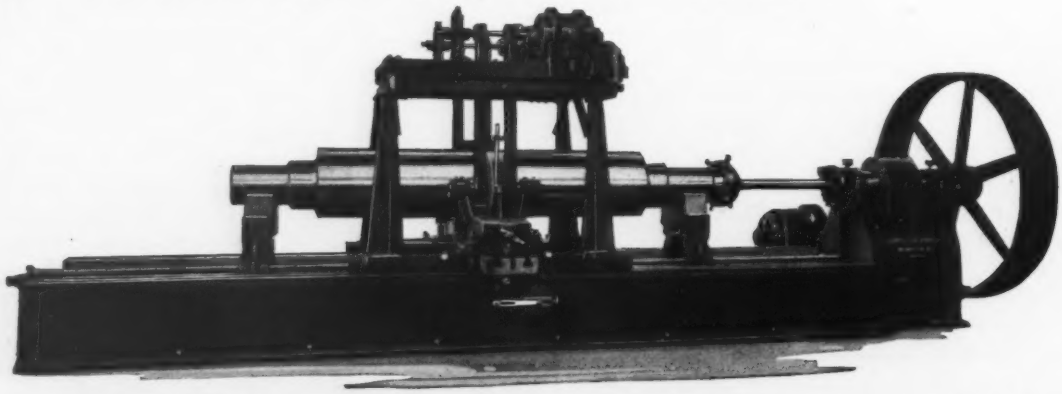
TRIMBEY MACHINE WORKS
Glens Falls - - New York

LOBDELL

ROLL GRINDERS are the only machines of the kind fitted with automatic crowning device which develops a perfect crown without the use of a guide or former and repeated trying for the correct setting.



LOBDELL Calenders are equipped with Patent Electric Motor, Hydraulic or Ratchet Lift all operated from the floor.

LOBDELL Micrometer Calipers are handy and accurate.

LOBDELL CAR WHEEL CO. Est. 1836 **Wilmington, Del. U. S. A.**

Section of the

Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G.MacNAUGHTON, Secretary

NEW MEMBERS OF THE T. A. P. P. I.

Since the last publication of new members to the Technical Association of the Pulp and Paper Industry, the following have been elected:

ACTIVE

Hubb Bell, United States Testing Company, 316 Hudson street, New York.

Charles M. Bullard, Marinette and Menominee Paper Company, Marinette, Wis.

Harry Kay, Price Bros. & Co., Ltd., Kenogami, Que.

William R. Maull, Dill & Collins Company, Philadelphia, Pa.

R. N. Miller, Forest Products Laboratory, Madison, Wis.

Stewart E. Seaman, 2616 Monument avenue, Richmond, Va.

ASSOCIATE

Adam E. Armstrong, Armstrong Machine Works, Three Rivers, Mich.

Samuel J. Baril, Maurice A. Knight, 404 World Building, New York.

Seth L. Bush, Crocker-McElwain Company, Holyoke, Mass.

James A. Cameron, Cameron Machine Company, 61 Poplar street, Brooklyn, N. Y.

Herbert H. Fish, Jr., Great Western Paper Company, Ladysmith, Wis.

Charles H. Plantz, St. Regis Paper Company, Deferiet, N. Y.

John R. Roberts, E. I. du Pont de Nemours & Co., Wilmington, Del.

H. Z. Schniewind, Foreign Paper Mills, Inc., 72 Duane street, New York.

William W. Spratt, Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa.

William J. Weed, Electro Bleaching Gas Company, Buffalo, N. Y.

Frank E. Winslow, General Electric Company, Witherspoon Building, Philadelphia, Pa.

JUNIOR

Albert E. Bachmann, Pejepscot Paper Company, Brunswick, Me.

John Buss, Bogalusa Paper Company, Bogalusa, La.

P. W. Carr, Pejepscot Paper Company, Lisbon Falls, Me.

John R. Dykers, Southern Paper Company, Kreole, Miss.

George F. French, Warren Manufacturing Company, Milford, N. J.

Louise E. McGrath, Booth Chemical Company, Elizabeth, N. J.

James D. Miller, York Haven Paper Company, York Haven, Pa.

Edwin A. Riley, Pejepscot Paper Company, Brunswick, Me.

Edward E. Saunders, Inland Empire Paper Company, Spokane, Wash.

Robert W. Van Kirk, Jr., E. I. du Pont de Nemours & Co., Inc., Boston, Mass.

TRANSFERS IN GRADE

Grellet N. Collins, from Junior to Active.

H. W. Laymon, from Junior to Active.

W. F. Thiele, from Associate to Active.

Confer on Paper Standardization

WASHINGTON, D. C., September 27, 1922.—A conference was held at the Bureau of Standards, Department of Commerce, on Monday between officials of the Paper Laboratory and the advisory committee from the paper industry for the Paper Section of the Bureau of Standards.

A report was submitted at the conference regarding simplification which had been prepared by the simplification sub-committee of the Bureau of Standards. Research problems were also discussed, including measuring the color of paper, foreign and domestic clays as filler for paper and the sizing of paper. Among those attending the conference were: Dr. S. W. Stratton, director of the Bureau of Standards; E. A. Curtis, chief of Paper Laboratory of the Bureau S. L. Willson, of the Graham Paper Co., and special co-operator with the bureau. The following paper manufacturers, who are members of the advisory committee from the trade, were also present: Arthur H. Nevius, chairman of the committee; W. R. Raybold, president, American Paper and Pulp Association; Charles Gordon of the Oxford Paper Company; Alexander Gilman of Kalamazoo, Mich.; D. A. Smith of the District of Columbia Paper Manufacturers' Company; John C. Schmidt of Schmidt & Ault, York, Pa.; Mr. Harrower, of Linton Brothers; Harry Fletcher of Alpena, Mich.; Ray Hatch of the Hammersly Paper Company, Garfield, N. J.; Fred Clark of the Pejepscot Paper Company, Brunswick, Me.; Dr. Hugh P. Baker, secretary of the American Paper and Pulp Association; Mr. Taylor of the Taylor Logan Company Papermakers and O. M. Porter, secretary of the committee.

Pulp Mills for Vancouver

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 25, 1922.—Vancouver is to get the big pulp and paper plant which the Seaman Paper Mills Company of Chicago plan to build in British Columbia, according to developments in the negotiations which are being carried on with Premier John Oliver and President Seaman and his associates who are here. The mills will get their power from Bridge River, near Seaton Lake, 100 miles up the Pacific Great Eastern Railway.

TECHNICAL SECTION, PAGE 150

DRYING PAPER

In connection with the study of drying and computing its efficiency the attached has been suggested for consideration at the session of the Technical Association of the Pulp and Paper Industry to be held at the fall meeting, October 9 and 10, in Detroit.

Moisture Removal Test

1. Test of.....Paper Machine.....
.....Mill ..... Company
To determine.....of dryer part
Date .....Duration .....

2. Features, Other Than Drier Part Design, Affecting Performance

(a) WET END (Note: The following data to be accompanied by proper outlines or section drawings).
Head box and slice: Width, Depth.
Breast Rolls: Diameter.
Wires: Length, Width, Gauge, Pitch—inches per foot.
Tube Rolls: Diameter, Number, Distance on centers.
Suction Boxes: Number, Width, Vacuum.
Suction Roll: Diameter, Suction area, Vacuum.
Couch Roll: Diameter.
Presses: First: Pressure per inch of width, Age of felt, Condition, Kind.
Second: Pressure per inch of width, Age of felt, Condition, Kind.
Third: Pressure per inch of width, Age of felt, Condition, Kind.
Fourth: Pressure per inch of width, Age of felt, Condition, Kind.

(b) BUILDING: (Note: The following data to be accompanied by proper plans and elevations).
Materials: Wall, Floor, Roof.
Hood: Length, Width, Height, Material.
Pit: Length, Width, Depth, Material.
Air supply system: Type, Capacity (cu. ft./min.).

3. Features of Drier Part Affecting Performance

(c) DRIER PART: (Note: The following data to be accompanied by proper outline and section drawings).
Drier Rolls: Length, Diameter, Area of cylinder, Area of heads, Arc of contact with paper, Length in contact with paper, Arc of contact with felts, Length in contact with felts, Number, Total area in contact with paper, Total area of driers.
Baby drier: Diameter.
Sweat Rolls: Number, Diameter.
Felt Driers: Number, Diameter.
Steam supply system: High pressure: Size supply line, Kind of regulating valve. Low Pressure: Size supply line, Kind of regulating valve.
Header: Number of sections, Diameter of 1st section, Diameter of 2nd section, Diameter of 3rd section, Diameter of 4th section.
Condensate removal: Kind and make of removal system, Number of header sections, High pressure (First) section: Size of Number driers connected, Second section: Size of Number driers connected, Third section: Size of Number driers connected, Fourth section: Size of Number driers connected.

Data

Furnish: ——per cent, ——per cent, ——per cent, Size —— per cent, Alum ——per cent, Clay ——per cent.
Paper: Grade, Basis weight, Finish.
Moisture in Stock: Consistency in head box, Freeness in head box.

Per cent moisture (bone dry basis): Leaving wire, Leaving 1st press, Leaving 2nd press, Leaving 3rd press, Leaving 4th press, Leaving baby drier, Leaving Drier Number 1, Leaving Drier Number 2, Leaving Drier Number 3, Leaving last drier.
Steam: (per cent moisture) High pressure supply, Low pressure supply, Entering 1st drier section, Entering 2nd drier section, Entering 3rd drier section, Entering 4th drier section, Entering air (Humidity), Leaving air (Humidity), Outside air (Humidity).
Temperatures: Stock: In head box, Leaving wire, Leaving 1st press, Leaving 2nd press, Leaving 3rd press, Leaving 4th press, Leaving baby drier, Leaving Drier Number 1, Leaving Drier Number 2, Leaving Drier Number 3.
Leaving last drier number Steam: High pressure supply, Low pressure supply, Entering first drier section, Entering second drier section, Entering third drier section, Entering fourth drier section, Leaving first drier section, Leaving second drier section, Leaving third drier section, Leaving fourth drier section.
Air: (Locate Positions on Sketch) Room air, Position Number 1, Number 2, Supplied, Discharged, Outside.
Pressures: Steam supply, High pressure, Reduced pressure, Exhaust, 1st section drier header, 2nd section drier header, 3rd section drier header, 4th section drier header.
Steam Discharged: 1st section drier head, 2nd section drier head, 3rd section drier head, 4th section drier head.
Air: Outside barometer, Inside barometer. Supplied air pressure, Removed air pressure.
Speeds: Paper speed, Entering air velocity. Discharged air velocity, Wind velocity.
Quantities: Pounds of water per hour at Head box, Entrance suction boxes, Leaving suction boxes, Entering suction roll, Leaving suction roll, Entering first press, Entering second press, Entering third press, Entering fourth press, Entering drier part, Entering first drier, Entering 2nd drier.
Leaving last drier.
Pounds of stock per hour at: Head box, Entrance to suction boxes, Leaving suction boxes, Entering suction roll, Leaving suction roll, Entering first press, Entering second press, Entering third press, Entering fourth press, Entering drier part, Leaving drier part.
Pounds of steam per hour: Entering 1st drier header, High pressure, Reduced pressure, Exhaust, Entering 2nd drier header, High pressure, Reduced pressure, Exhaust, Entering 3rd drier header, High pressure, Reduced pressure, Exhaust.
Pounds of condensed steam leaving 1st drier header, 2nd drier header, 3rd drier header, 4th drier header, Pounds of air supplied by ventilation system, Pounds of air removed by ventilating system.
B. T. U. in sheet: Entering drier part, Leaving drier part.
B. T. U. in steam: Entering drier part, Leaving drier part.
B. T. U. in air: Entering room, Leaving room.
Results: Hours run, Pounds paper made, Pounds of moisture removed, Pounds of steam used F. & A. 212°, Pounds of steam per lb. of paper, Pounds of water per sq. ft. of drying surface, Pounds of steam per lb. water removed, B. T. U. supplied. B. T. U. required, 100 per cent efficiency, EFFICIENCY.

Bud Worm Works Havoc in Maine

[FROM OUR REGULAR CORRESPONDENT]

SKOWHEGAN, Me., September 19, 1922.—The spruce bud worm has worked havoc in the forests of northern Somerset county, causing large tracts of what was fine growth of spruce to look as if fire had run through them. Several of the paper making companies are planning to cut this timber the coming season and save it until needed in the pulp mills.

XUM

Fall Meeting of the Technical Association

HOTEL WOLVERINE, DETROIT, MICHIGAN

Monday and Tuesday, October 9 and 10, 1922

PROGRAM

Monday, 9.30 a. m. Business Session.

GEO. E. WILLIAMSON, Chairman, Amendments to the Constitution, Reports of Committes, General Business.

Monday, 12 m. Executive Committee Luncheon.

Luncheon meetings of other committees as arranged by the chairmen.

Monday, 2 p. m. Waste in the Industry.

R. B. WOLF, Chairman, G. D. BEARCE, Vice-Chairman, Mill Effluent and Material Recovery, Barking Drum Refuse.

Monday, 7.30 p. m. Association Dinner in Hotel Wolverine. Tickets $5.

Tuesday, 9.30 a. m. Sectional Meetings.

Paper Testing, F. A. CURTIS, Chairman; Drying of Paper, F. C. CLARK, Chairman.

Tuesday, 2 p. m. Plant Visits as Arranged.

Invitations have been received from Detroit Sulphite Pulp and Paper Co., Port Huron Sulphite and Paper Co., Chemical Engineering Department, Ann Arbor.

XUM

A DICTIONARY OF PAPER TERMS

(Concluded from last week)

Zea Mays. Indian Corn—maize—maize straw is a possible source of paper-making material.

Zeolites. Hydrous silicates of alumina and the alkalies, Artificial zeolites are used in connection with water softening.

Zinc Chloride. ZnCl a salt which, when concentrated, has a marked hydrolizing or solvent action on cellulose which dissolves in a solution of zinc chloride in twice its weight of 35% hydrochloric acid. Zinc chloride is Solution A of Herzberg's stain for microscopical examination of paper,—which see (note Herzberg's stain will appear in revision).

Zinc Dust. Finely divided zinc which has a strong reducing action. It is used in examining dyestuffs. It is readily inflammable.

Zinc Sulphate. White vitriol.

Directory of Terms—Additions and Revisions

Editor's Note.—The list given represent the additions and approved revisions so far received by the editor of the text books, J. N. Stephenson, Gardenvale, Que. Superintendents and practical pulp and paper makers are especially urged to check over the terms published in the issues of June 1st to June 29th inclusive and submit additions and revisions.

Acid. Colloquially any chemical solution of a corrosive nature either acid or alkali.

Air Dried. Paper, either hand made or machine made dried by exposure to air either in lofts, as in the case of hand made, or in festoons in the case of air dried machine made paper. Leather board and sometimes board for special purposes is air dried by spreading the sheets on the ground in the open, now very seldom seen.

A. T. S. (Animal Tub Sized). Papers tub sized or top sized with glue or gelatine.

Baby Drier. Pony Drier. Receiving Drier. Fore Drier. The first drier next the presses, usually of smaller diameter than the rest of the stack and not heated.

Baby Press. One of the primary presses of a cylinder machine placed between the couch and the first press.

Back-off. Refers to the pressure pump customarily used in mechanical pulp mills for reversing the action of the hydraulic pressure cylinders, thereby ensuring uniform pressure in the cylinders not affected.

Backing Wire. The coarse wire netting on a cylinder mold or other screen serving as a support for the finer facing wire in contact with the stock.

Band. The part of the wrapper of a paper roll sometimes applied to each end, usually of a contrasting color for distinctive effect.

Barking Drum. A cylinder in the interior of which blocks of wood are tumbled by rotation for the purpose of removing the bark—continuous and intermittent, of several designs.

Baumé. A hydrometer scale (see hydrometer) used for liquids lighter or heavier than water. Heavy liquids start with water as zero (Sp. Grav. 1.000) and run upwards as they become heavier (in specific gravity). Light liquids have water as 10° and run upwards as they become lighter (in specific gravity). Also spelled Beaumé.

Berlin Blue. A color produced in the beater by adding first nitrate of iron and later yellow prussiate (ferrocyanide) of potash. Often called Prussian Blue.

Bevel Gear. A geared drive in which the driving plane is not parallel to the plane of the driven gear. When these are at right angles they are referred to as Miter gears.

TECHNICAL SECTION, PAGE 153

Blasting Paper. A heavy wrapping paper, usually water finished and composed largely of chemical pulp. Used in mines for introducing the powder into the drill hole.

Blasting Rolls. Small rolls of blasting paper, usually of 3, 5 or 7 pounds weight and 9, 12 or 15 inches in length and tied in bundles of five.

Body Paper. Refers to bulking or supporting paper of enameled or other composite papers.

Box. The journal housing, carrying the bearing metal of babbitt or brass and supporting the journal.

Brasses. Previously formed bearing liners of brass or bronze to be introduced into the box when required.

Broke Beater. The beater, usually equipped with special roll for continuous operation, used for pulping the broke produced on the paper machine.

Broke Hustler. A spare member of the machine crew employed in some mills, especially on book and writing, to handle the broke.

Bronze. An acid-resisting alloy composed ordinarily of 90 per cent copper, 10 per cent tin. (Tobin Bronze.)

Bulk. A term used to indicate the thickness of a certain number of pages or the number of sheets to an inch (caliper).

Bull Chain. A single conveyor chain by which logs are brought to the saw or loading platform (log jack).

Bull Cook. The camp janitor having care of the bunkhouses and cutting and splitting the fire wood for the camp.

Bull Screen. The coarse screen in mechanical pulp mills which receives the pulp from the grinders giving it a preliminary screening—of several forms.

Butchers Paper. Wrapping paper for meat shop use. Of sulphite and mechanical pulp in various proportions according to quality but highly waterproof with rosin size.
Butchers' Manila is steam finished and of manila color.
Butchers' Fiber is water finished in natural color.
Butchers' Dry Finish, machine, finished, usually than the in color, of lighter weight and better quality than the others mentioned.

Camels Hair. Transmission and conveyor belt composed of camels hair woven in a solid web.

Cant. A rectangular timber of any dimension produced in a saw mill preparatory to further operation.

Cant Hook. A hood logging implement for turning logs, somewhat similar in design to a *peavey* but with the end shod with a band of steel provided with a lip instead of a spike.

Car Lining. Paper composed usually of screenings or waste paper used for lining cars for protection of the contents.

Carbon Black. A material similar to lamp-black but with lower coloring power, used like lamp-black for producing grey and black colors in paper.

Case Lining. Specially made paper for lining boxes for ocean shipments. Usually made impervious to moisture by treatment with asphalt.

Catalog Paper. A light weight printing paper of good quality. Used as the name implies.

Check Valve. A fitting for a pipe whereby fluids may freely pass in one direction, but are prevented by its construction from passing in the opposite direction.

Chemical Manila. Railroad manila writing composed entirely of chemical pulp (sulphite and soda).

China Paper. A special waterleaf paper made in China and used by plate printers.

XUM

Chuck (for roll of paper). A device which, by its action, prevents the roll from turning on the shaft, permitting control of its rotation. It is bolted to the shaft and grips the end or inner side of the core. Employed on roll printing presses and rotary cutters.

Cigarette Holder. A pipe used in connection with a fourdrinier paper machine in putting on a wire. The pipe carrying the wire is slipped over the journal of the bottom couch roll permitting the wire to be slipped into position.

Clothing (of paper machines). The wire, jacket, press felts and drier felts.

Clutch. A device for transmission of power permitting disengagement of two general types, friction clutch (friction coupling) and jaw clutch.

Cooker. Colloquial term for the digester.

Cooking Acid. The acid used in sulphite digestion. Reclaimed acid as opposed to system acid.

Copper Number. A means of determining the amount of oxycellulose present in chemical pulp, by boiling it in Fehling's solution under regulated conditions. The C. number is the grams of copper that would be reduced by 100 grams of bone dry fiber.

Cord. A unit for measuring wood. The common *cord* is roughly hewn wood or pulpwood in lengths of 4 feet, in a pile 8 feet long and 4 feet high. 8′ x 4′ x 4′ = 128 cubic feet. There are cords of other dimensions as the *Quebec cord* 8′ x 4′ x 4′ 3″. Dealers in fuel wood use a *cord* which is really 1/3 of a cord. Their cord is 16″ deep—the 48″ sticks being cut in three pieces of 16″ and making 3″ ricks or cords, 8′ x 4′ x 1′ 4″. Some pulpwood is bought in 8 foot lengths. A pile 8 feet long and 4 feet high would be a *double cord* 8′ x 4′ x 8′. It contains less than two cords of 4-foot length owing to closer piling possible with shorter pieces. Cords of pulp blocks four feet long or two feet long piled just as they fall into the block pile take up more space, so there are various piled block cords depending on the average diameters of blocks and the conditions of piling. *A solid cord* is the actual wood contained in a piled cord of 128 cubic feet—in the Province of Ontario it is 115 cubic feet.

Counter. One employed in a finishing room to count the sheets of paper into reams.

Counter Rolls. Rolls of wrapping paper usually 9 inches in diameter and from 9 to 48 inches in length. So called from the use in shops.

Counter Shaft. A secondary or intermediate shaft by which the desired speed of a machine is attained (jack shaft).

Cracker Pulp. Mechanical pulp in laps that has been hydraulically pressed--from similarity in appearance to soda crackers.

Cut-to-Register. Paper cut that watermark shall appear in stated position in the sheets.

Daylight Lamp. Equipment by which an artificial light is produced similar in quality to natural light of northern exposure.

De-inking. Process for removing the ink from printed paper and recovering the pulp for re-use.

Diamond Point. A popular design of burr for dressing pulp grinders.

Die-wiping. Paper used for cleaning dies in print shops. A special quality of water finished paper.

Direct Cooking Process for Sulphite Pulp. Also referred to as *quick cook*, or Ritter-Kellner, from its originators. In this process which is that most in practice today, the digester charge of chips and liquor is cooked by the introduction of steam directly into the charge. It is usually understood to mean a cooking time less than ten hours as opposed to *slow cook* or semi-Mitscherlich of longer periods.

Distillation. The process of separation or purification whereby volatile materials are vaporized by heat and are thereafter condensed by cooling in such a way as to be delivered into another vessel. The act of converting a liquid into a vapor and condensing back to liquid form again.

Dog. An attachment on a saw-carriage by which a log is firmly held while being sawn.

Dolly. A low single wheeled truck without handle on which heavy rolls are transported.

Drier Spear. A long pole with a curved spike on the end, used in connection with the paper machine to remove paper that has wound on a drying cylinder.

Dry Finish. A term used of wrapping paper pertaining to the surface finish which is produced by light calendering without previously being dampened.

Elevator. A vertically operating conveyor.

Emperor. Largest sheet made by hand—48″ x 72″.

Exhauster. A reciprocating vacuum pump used on milk of lime acid systems.

Facing. The fine wire screen used on the working surface of cylinder molds.

Fan Pump. A centrifugal pump which supplies the stock to the machine screens. In it the stock furnished by the stock pump is mixed with white water in the desired proportion.

Festoons. Paper which has been coated (see coated paper) or printed for wall paper is dried by air currents in a room through which the paper travels supported by slats and hanging therefrom in long loops called festoons.

Fillet. A triangular piece of material used to fill a corner as in a tank or beater tub.

Finisher. An operator who is employed in the finishing room. Usually refers to one who wraps rolls or sheets for shipment.

Finishing Broke. Refuse paper produced in the finishing room.

Flag. The means used to indicate a splice or paster on a roll. Usually a piece of colored paper or cambric.

Flat. Sheets of paper not folded.

Flat Writing. Writing paper of glossy finish and composed of bleached sulphite and soda pulp. The term refers both to the finish and quality.

Friction. A clutch by which the contact is maintained through friction as opposed to the jaw clutch.

Friction Drive. Where power is transmitted through rolling friction by pressure together of two rotating members. Frequently used on saw carriage and live rolls.

Free. Paper is sometimes described as *free* when it is composed entirely of rags and chemical pulp and free from mechanical pulp.

Fruit Wrap. Strong tissue paper in sheets for wrapping fruit for shipment.

Glassine. A transparent wrapping paper produced by calendering imitation parchment paper which has been previously dampened.

Globe Rotary. A rotating digester of spherical shape, 12 to 14 feet in diameter, commonly used for boiling rags, waste paper and straw.

Gyps. Common term for the presence of calcium sulphate or gypsum in milk of lime acid systems. Indicated by a permanent milky color that will not clear on further absorption of SO_2.

Ham Wrap. A coarse heavy paper composed mostly of waste paper. Used for outer wrappings in meat packing plants.

Header. The round or octagonal sheet of paper used to protect the end of a roll in wrapping. There is usually an inside header and an outer.

XUM

Heater. Apparatus consisting of steam pipes and fan with casing for the production of hot air for heating and ventilation.

Herzberg's Stain. A means of distinguishing fibers under the microscope (devised by Herzberg). It consists in treating the fibers on the slide with the following mixture:

Solution A.—20 grams zinc chloride.
10 cubic centimeters water.
Solution B.—2.1 grams potassium iodide.
0.1 grams iodine.
5. cubic centimeters water.

Dissolve A and B separately, then mix and keep in a dark place for several hours before using, or until all sediment is settled, pour off clear liquor. Keep in brown bottle in dark. Fibers are colored as follows:

Groundwood, jute, tow, uncooked manila hemp and any highly lignified fibers are yellow. Well cooked and bleached, sulphite, soda, straw or esparto fibers are blue or dark blue; cotton linen and well bleached manila are wine red.

Hog. A machine for reducing slabs or refuse wood to fine particles for fuel purposes.

The product of the machine, otherwise *hog refuse.*

Hood. Specifically the covering of the drier part of the paper machine. Generally used to carry off the water vapor and heat generated in operation.

Hookaroon. A woodroom implement for handling wood blocks as name implies. Very similar in design to pickaroon but without a striking face.

Hot Pressed. Paper glazed by pressure between heated plates.

Hot Rolled. Paper glazed by hot cylinders.

India Paper. A thin opaque paper used for bibles or other volumes of many pages which are required to give little thickness. See Bible Paper.

Indirect Cooking. Means of cooking chemical pulp either by steam in coils as in the Mitscherlich system for sulphite or by heating the liquor in special heaters outside the digester as in the Morterud system (which see).

Interchangers. Means of cooling or heating liquids by counter-current effects in double walled pipes or similar equipment.

Jack Shaft. See Counter Shaft.

Jog. A term used in connection with rotary cutter. To keep the pile of sheets in regular order as it is being formed.

Jumbo Roll. The trimmed web of paper the full width of the machine rolled as it comes from the reel. Also refers to any large roll intended later to be cut into sheets or re-wound into smaller rolls.

Kerf. The width of the saw cut.

Kicker. A mechanical appliance operated by steam, compressed air or power to move a log from the conveyor with action as term indicates.

Keir. A stationary vessel with perforated false bottom in which cooking liquors which are withdrawn at the bottom are returned at the top. Formerly used in preparing pulp from old papers.

Lay Boy. A machine used in connection with a rotary cutter to arrange the sheets in regular piles and in some cases to count the sheets.

Lighter Bar of a heater. Means by which the roll is raised from the bedplate while furnishing.

Lime Sludge. The refuse of lime from bleach plants, soda and sulphate mills.

Linters. The short cotton fiber attached to the seed, now used as a paper making material.

Loading. See Fillers. Loading paper to add weight only is not presumably done.

Log Jack. Conveyor by which logs are removed from the pond for loading or to the saw mill.

Lustra Cellulose. Artificial silk prepared by drawing or spinning solutions of nitro cellulose into water to precipitate or render them insoluble and afterwards denitrating by treatment with magnesium sulphide solution.

Machine Broke. Refuse paper produced while paper is being made.

Mill Wrapper. Heavy coarse wrapping paper used for wrapping the paper shipping rolls. Usually of sulphite screenings with some waste paper.

Mimeograph. A waterleaf paper used as its name implies. Usually of soda pulp or pulp recovered by de-inking book paper.

Miter Gears. See Bevel Gears.

Mitscherlich, Doctor A. One of the pioneers of the sulphite pulp industry who devised the method known by his name. He was the first to use brick in sulphite digester linings, and proposed the use of waste liquor in an engine sizing process.

Mitscherlich Pulp. Sulphite pulp cooked in a digester by indirect steam in coils inside the digester. A longer cooking time and lower pressure is used, but the pulp is more easily bleached than by the direct steam or quick cooking process.

Montejus. A pistonless pump for raising acids by compressed air.

Morterud Process (from the inventor). The cooking of chemical pulp by means of liquor which is circulated through a heater located outside the digester. Advantages claimed are that the liquor is not diluted, that there is better circulation and saving of steam, and higher yields.

Mullen Test. The reading in points (energy in pounds per square inch) required to burst a sheet of paper confined in the Mullen testing machine, wherein the sample of paper properly clamped, is acted upon by a rising diaphragm of rubber actuated by hydraulic pressure.

Multiple Effect. Evaporation is based on the principle that the boiling point of a liquid depends on pressure as well as temperature. The steam produced by boiling at atmospheric pressure will itself cause boiling in vessels under reduced pressure or partial vacuum. In M. E. evaporation each "effect" is at a lower pressure or partial vacuum thus securing minimum loss of heat.

Muss. The refuse of rags.

Neutral Size. Rosin size prepared with 15 to 16 per cent soda ash. Containing little or no free rosin.

Nigger. Attachment to the saw carriage used to turn or move the partly sawn log mechanically.

Parchmyn. Imitation parchment.

Paster. A splice in the web of paper, indicated in a roll by a "flag."

Patent Coated. A certain quality of board.

Peavey. A logging implement somewhat similar to a cant-hook but having a spike in the working end of the shaft.

Photostat. Paper for use as indicated. Somewhat similar to photographic or blue-print paper.

Pickaroon. A woodroom implement having a handle about 36 inches long and a head having a striking face opposed to the sharp curved spike.

Plastometer. An instrument for measuring the hardness of the rubber covering of press rolls.

Pop Test. Bursting strength test by the Mullen instrument (from the sound made).

Pope System. An arrangement for transporting the web of paper between the different sections of the paper machine by means of air. From its inventor.

Pulp. Colloquial term in paper mill for mechanical pulp as opposed to sulphite. In timber districts pulpwood as distinguished from saw logs.

XUM

Pulp Boards. Cardboard made in a single web, as distinguished from cardboards consisting of several thicknesses or plies.

Quick Cook. See Direct Cooking.

Ream Cutter. Machine for cutting sheets of paper into smaller sizes. Known as "guillotine" or "trimmer."

Red Rosin. A grade of building paper of red color by the use of pigment and made fairly water proof. Composed of waste paper.

Roll Grinder. Machine for grinding press and calender rolls to the desired surface and degree of crown.

Roll Skinner. Operator of a pulp wet machine who cuts the sheet of pulp from the press roll and folds it into a lap.

Ritter Kellner. See Direct Cooking.

Schopper's Instruments. One of these is a machine for measuring tensile strength of paper, another is for finding the resistance to folding.

Scott's Evaporator. A form of multiple effect evaporator largely used in soda pulp mills.

Selenium. At. Wt. 79.2 melting point 217° C. B. pt. 690° C. An element only found in small quantity but often associated with sulphur. Very small amounts have been found exceedingly detrimental in the sulphite cooking process tending to decompose SO_2 and throw it out of useful action in the form of calcium sulphate, acting as a catalyst similarly to free sulphur but to a much greater degree.

Slip. 1. A fluid mixture of clay and water.
2. To arrange sheets of paper by reams while "laying off" from a rotary cutter.

Stuffing. Otherwise called calender staining or padding. The act of applying color to paper as it passes through the calenders.

Sublimation. A form of distillation in which a solid passes to a state of vapor and condenses to a solid again without passing through the liquid state. Sulphur is an example. Flower sulphur is the result of condensing hot sulphur vapors which have not been oxidized due to insufficient supply of air or have been chilled below the kindling temperature before combustion, usually the former, as the boiling point of sulphur is nearly 200° C above its ignition point.

Substance Numbers. Numbers that refer to the weight per ream of certain standard sizes of paper, which make it possible to ensure that paper of same thickness or substance may be secured when ordering other sizes. For example the standard size for writing paper is 17 x 22. If this had been purchased at 20 lbs. per ream and a buyer wanted paper of same substance but different size say 18 x 24, he would order 18 x 24 No. 20.

Surface Sizing. See Tub Sizing.

Top Sized. See "Tub-Sized."

Sizes of Paper

Those given here are the principal surviving names used in Great Britain and occasionally here. There are numerous others of more local use in England for wrapping and millboards. They are chiefly of historic interest in America and in many cases are derived from old watermarks as "Crown" or "Pott," or old methods, as "Post"—from the pile of wet papers just couched.

Paper is now largely ordered or referred to by the size required and its substance number.

Quarto or 4^{to} means as a rule a quarter of the size referred to.
Octavo or 8^{vo} means an eighth.
Duo Decimo or 12^{mo} means one-twelfth.

*Indicates that name and size are the same in United States and Canada.

SIZES OF PAPER

Name	Use	Size
Antiquarian	Drawing	53 x31
	Plate	53 x31
	Portfolio	53 x33
	Writing	53 x31
Atlas	Drawing and chart	34 x26
	Board	30 x26
	Plate	34 x27
—Extra	Millboard	32¼x26½
—Large	Portfolio	35 x27
Check Folio	Writing	38 x26*
		17 x24
Check Royal	Writing	19 x26
Colombier	Drawing	34½x24
	Millboards	36 x24
	Plate	35 x24
	Writing	34 x23
Copy	Cartridge	20 x16½
	Writing	20¼x16
Crown	Millboards	16½x20
	Portfolio	15 x19
	Writing	15 x19
	Wrapping	15 x20
Demy	Drawing	15½x20
	Writing	16 x21*
	Printing	22½x17½
		23 x18
		24½x36½
	Cartridge	22½x17¾
	Portfolio	23 x18
	Wrapping	18 x24
Double Cap	Writing	17 x28*
Double Crown	Writing	19 x30
	Printing	20 x30
	Wrapping	
Double Demy	Writing	21 x32*
	Printing	36½x49[1]
		22½x35¼[1]
	Wrapping	24 x36
Double Elephant	Drawing	26½x40
	Writing	27 x40
Double Folio (Double Post)	Writing	22 x34*
Double Foolscap	Writing	16½x26½
	Printing	17 x27
	Blotting	16¾x26½
Double Pott	Writing	15 x25
	Printing	15 x25
Double Royal	Printing	42 x56[3]
Elephant	Writing	23 x28
	Book	
	Drawing	
	Cartridge	
Emperor	Writing	48 x72
Flat Cap	Writing	14 x17[4]
Flat Foolscap	Writing	13 x16

[1]Double, double, quadruple demy, United States and Canada.
[2]In Great Britain and Canada.
[3]Double, double Royal, United States and Canada.
[4]Canada and United States.

Flat Letter	Writing	10 x16
Folio (Folio Post)	Writing	17 x22*
Foolscap	Writing	13¼x16½
	Book	
	Drawing	
	Cartridge	14 x18¾
Imperial	Cartridge	21 x36
	Writing	23 x31
	Book	22 x30¼
	Drawing	
Index Royal	Writing	20 x25
Large Post	Writing	16½x20¾
Medium	Writing	18 x23*
	Printing	18¼x23
	Bock	17½x22½
	Drawing	
Medium Post	Writing	18 x22½
Pinched Post	Writing	14½x18½
Post	Writing	19 x15¾
	Blotting	
	Printing	19½x15¾
Pott	Writing	15 x12½
	Printing	15½x12½
Royal	Cartridge	19 x24*
	Writing	
	Book	
	Drawing	
	Printing	20 x25
Super Royal	Writing	20 x28*
	Printing	21 x27
	Book	19¼x27½
	Drawing	
	Cartridge	19¼x27
Typewriter Double Cap	Writing	16 x26
Wedding Royal	Writing	20 x24

Association Service

Although the Technical Association does not conduct an employment bureau, it is often asked to suggest competent technical men and superintendents for positions that are open. The secretary is glad to be of such service both to the members and to the pulp and paper manufacturers.

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STEAM UTILIZATION IN MODERN NEWS PRINT MILL*

By S. W. Slater[1] and J. E. A. Warner,[2] Cap Madeleine, Que., Canada

The purpose of this paper is to show the heat required in the manufacture of news print on a modern basis. It is, in general, a detailed study of the concrete conditions found to exist in a modern paper mill with which the authors have been associated. Other conditions found to exist in paper mills have been treated, however, with a view of showing their bearing upon the different subjects which are covered herein, and also to facilitate comparison by other mills whose installations are different from the one cited.

In general, the importance of heat conservation has not been appreciated in this industry and, in view of the national movement to conserve natural resources, all news print paper mills are in duty bound to study their own particular problem, so that their coal or fuel-oil requirements may be reduced to a minimum. It is hoped, therefore, that this paper may be of assistance to those who, no longer content with operating by rule of thumb, desire to analyze their heat load, in order to assist in conservation and to reduce the cost of manufacture.

A survey made as of January 1, 1922, shows that the United States and Canada have a combined daily output of about 8,500 tons. The tonnage produced during the year 1921 was approximately 2,038,095 tons, and the value of this tonnage, at a representative figure of $100 a ton, would be $203,809,500.

On the basis of the familiar statement that "One ton of coal is required to produce one ton of paper," the news print industry has a yearly fuel demand equivalent to about 2,040,000 tons of coal. In the United States, it has been quoted as occupying sixth place in capital invested and value of product, while in horsepower installed it probably ranks fourth.

Description of Mill Investigated

The building housing the two paper machines is 288 feet long by 88 feet wide and has a total height of 45 feet. It is of standard brick and steel construction, with concrete floors and roof, the latter being waterproofed with tar and felt. The paper machines are carried on an operating floor which is 27 feet from the roof. Underneath is a basement having a height of 18 feet, and its floor at grade level. Only the northeast side is exposed, other buildings adjoining the remaining side and ends. The openings in the exposed wall have a total area of 3,000 square feet.

The greater part of the driving mechanism for this installation is located in the basement. The prime movers are steam turbines of the single-stage non-condensing type, direct-connected through flexible couplings to reduction gears, and have a rated capacity of 400 b.hp. at a speed of 2,675 r.p.m. This gives a speed reduction of about 7 to 1. The turbo-gears in turn drive an English system of rope transmission, in which each section of the paper machine has its own jackshaft, carrying a cone pulley and sheaves.

By means of belts, power is transmitted from the cone pulleys on the jackshaft to the cone pulleys driving each section of the paper machine. The cone pulleys transmit through a friction clutch and herringbone gears to each of the sections. In the case of the drier sections further spur gears are used to drive from one drier to the next in the section.

The Paper Machines

The paper machines are of the fourdrinier type, are 166 inches wide and have three presses. The drier sections consist of one fore drier, 24 inches in diameter by 162 inches face; 32 driers, 60 inches in diameter by 162 inches face; and two felt driers, one for each section, 48 inches by 162 inches. All driers are of cast iron, bored on the inside, and turned and polished on the external surfaces. Each drier is equipped with a dipper, to remove the water of condensation. These machines are designed for a maximum speed of 700 feet per minute.

News print consists of from 70 to 85 per cent of ground wood and the remainder sulphite pulp. After the mixture has been reduced to a consistency of about ½ per cent, it is caused to flow onto the wire of the paper machine in amounts carefully regulated so as to finally produce finished paper weighing 32 pounds per ream of 500 sheets, size 24 by 36 inches.

The web is formed by the oscillating motion of the fourdrinier section. Water is removed through the wire, assisted by the capillary attraction of the table rolls, which also act as carriers for the wire. The suction boxes remove a large quantity of water and assist in closing the sheet. The paper then passes between the couch rolls, which press out additional moisture.

In passing through the press sections the sheet is carried on woolen felts between weighted rolls, further reducing the moisture content.

The paper is then ready to enter the driers, where water is removed from the sheet by contact with steam-heated cylinders and is carried through same on canvas felts. The last drier is equipped for cold-water circulation, so as to dampen the sheet before it passes through the calender stack for ironing and polishing, prior to cutting to specified size and winding on cores.

Heat Required for News Print Manufacture

In order to show more clearly the heat required for news print manufacture, simultaneous tests were conducted on one of the previously mentioned machines to determine the heat demand for driving, drying and ventilating.

The data pertaining to the turbine test are given in Table 1. The steam supplied to the turbine was the same as that used by the driers. In other words, the turbine water rate balanced the drier heat demand and no auxiliary live steam was required.

Table 1. Turbine Test

Initial steam:	
Pressure, lb. per sq. in. abs	160.7
Temperature, deg. Fahr	401.3
Total heat per lb., B.t.u	1217.3
Exhaust steam used by driers:	
Pressure, lb. per sq. in. abs	23.7
Temperature, deg. Fahr	248.1
Total heat per lb., B.t.u	1164.7
Lb. steam per hour	16,822.00
Lb. steam per min	280.37
B.t.u. per min. to turbine	14.747.30
Equivalent B.t.u. per b.hp. (as given by manufacturers)	44.17
B.hp. developed	334.00
Water rate, lb. per hp-hr	50.37

In selecting a suitable prime mover the governing factor is the amount of steam required for drying the paper; consequently it does not follow that the engine or turbine having the lowest water rate is the most suitable.

The water rate of the prime mover, in conjunction with the initial steam pressure and quality, must also be such as to insure approximately dry exhaust steam, at drier pressure, as it is undesirable to have steam of a high moisture or superheat content entering the driers.

Fig. 1 has been prepared to show the effect of the water rate of the turbine upon the quality of the exhaust. It will be noted that for the rate existing at the time of the test the exhaust was superheated 11 degrees Fahr., and that when 45 pounds were used per brake horsepower per hour the exhaust steam would be dry-saturated.

In the past it has been very difficult to obtain data showing the horsepower requirements of paper machines, but with the advent

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of motor drives more information is becoming available. It is impossible to give a formula that will cover all installations, for the power requirements will vary with the type and mechanical design of the machine, the conditions under which it is operated and the efficiency of transmission. The following, however, is cited to show approximately the power demand of the variable-speed drive, and is based on a speed of 100 feet per minute and 100 inches width:

1 Modern high-speed motor-driven machines, having four presses, forty 72-in. driers and operating at speeds varying between 700 and 1,000 ft. per min.....25 to 30 hp.
2 Turbine-driven machines, rope-drive transmission, having three presses, thirty-two 60-in. driers, and operating at speeds of 550 to 700 ft. per min.....30 to 34 hp.
3 Engine-driven machines, Marshall drive, three presses, thirty-two 48-in. driers, and operating at speeds of from 350 to 600 ft. per min.....33 to 38 hp.

Electric Drives for Paper Machines

Much attention of late has been given to electric drives for paper machines, and in some recent installations the electric energy for driving is generated by a hydroelectric plant. The steam required for the driers is then obtained from high-pressure steam reduced through a pressure-reducing valve to a lower pressure, with

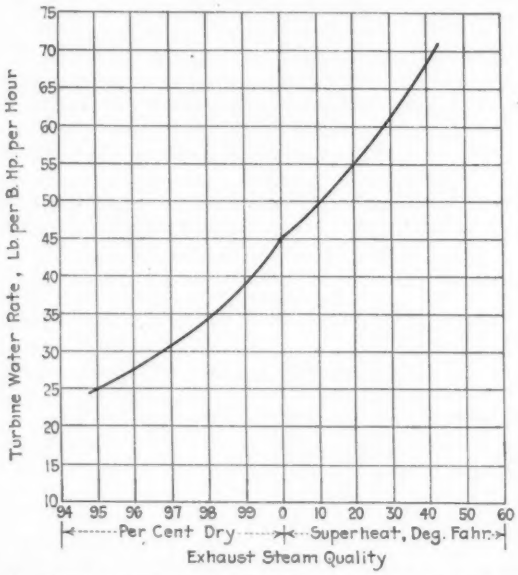

FIG. 1—CURVE SHOWING EFFECT OF WATER RATE ON QUALITY OF EXHAUST

consequent superheat; as will be shown later, however, superheat is not suitable for use in the driers.

Further, unless electrical power can be purchased at a cheap rate, it is not thought that such an installation is economical, and for the purpose of illustrating this point the following computations have been made to determine at what price electrical energy would have to be purchased to be the equivalent of steam assumed to cost $0.75 per 1,000 pounds.

Referring to Fig. 2, which is based on the test given in Table 1, straight line *A* (205.1 B.t.u.) represents the heat of the drier condensate, and line *C* (1217.3 B.t.u.) the total heat of one pound of steam under the conditions given. Curve *B* shows the relation between the water rate of the turbine and the heat contained in the exhaust available for drying.

AC (1012.2 B.t.u.) therefore represents the heat per pound of steam which would be available for drying if a pressure-reducing valve was used. *BC* (52.6 B.t.u.) represents the amount of heat abstracted from the initial steam in doing work in the turbine.

It will be seen that the quantity expressed by *BC* is small in comparison with that represented by *AB* (959.6 B.t.u.), and that the exhaust steam contains nearly as much heat as the initial steam.

From the preceding data and based on 7,600 operating hours per year, to develop one brake horsepower-year, 20,136,000 B.t.u. are required. This is equivalent to 19,900 pounds of steam, which, at an assumed cost of 75 cents per 1,000 pounds, makes the steam cost of a horsepower-year approximately $15.

Assuming the efficiency of the electric drive to be 95 per cent and that of the drive described to be 75 per cent, the cost of purchased electrical power must not exceed $19 per horsepower-year.

This comparison does not take into consideration interest and depreciation on capital invested or the maintenance and operation costs; but as the initial cost of the electric drive is approximately two and one-half times that of a turbine rope-drive installation, it is thought that if these costs were considered, the comparison would be favorable to the turbine rope drive.

The electrical installation, however, offers many advantages from the standpoint of operation, and with the development of high-speed machines will no doubt become the most acceptable type of drive. It is the opinion of the authors that the application of the motor drive will prove most economical when the necessary electrical power is developed by a turbo-generator, the exhaust from which would be utilized for drying the paper.

The bleeder or extraction type of turbine would have the advantage of greatest flexibility in that a minimum amount of steam would be wasted during periods of light loads, when practically no steam is required in the driers.

Drying Paper

In the drying of paper it is requisite that the moisture be removed gradually to prevent scorching and cockling of the sheet, and this requires a definite temperature gradient through the machine. It is also necessary that the temperature of the paper be kept within certain limits to produce a good, strong sheet.

The authors believe that the logical method to employ in these heat calculations is to base all figures on the pounds of moisture removed from the paper, instead of on the actual production. This is due to the fact that the moisture content is variable, depending upon the number and efficiency of the machine presses and the amount of moisture desired in the finished sheet.

The amount of moisture in the paper entering the drier section generally varies from 65 to 76 per cent, with an average of about 72 per cent. The amount of moisture in the finished sheet varies from 5 to 10 per cent, with an average of about 8 per cent. It is important that enough moisture remain in the finished sheet to insure proper finish and strength.

By the use of the following formula the number of pounds of moisture to be removed per pound of finished paper can be readily determined:

$$W = \frac{M_1 - M_0}{100 - M_1}$$

where W = pounds of moisture removed per pound of dried paper
M_1 = percentage of moisture in sheet entering drier section, and
M_0 = percentage of moisture in dried sheet.

It is important that as much moisture as possible be removed from the sheet before it enters the driers. It should be understood, however, that there are limitations to the amount of moisture that can be removed by mechanical means, namely, the possibility of crushing the delicate web of newsprint and the effect on the life of the press felts. Each mill, by considering the above in conjunction with the cost of steam, should determine the most efficient point of moisture removal.

In order to determine the economical life of machine clothing, in relation to steam cost for drying, a study of results obtained in several mills was made. This showed that the relation between life of felts and the percentage of moisture entering the driers followed a straight line, and that it is the combined felt-days of all the press

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felts which determines the moisture in the sheet entering the driers. This is a fortunate relation, in that the operating days of each of the three press felts is seldom the same at any one time.

Fig. 3 shows the relation between the combined felt-days of the three press felts and the average percentage of moisture leaving the presses for the period considered; this period being taken as one-third of the combined felt-days.

Table 2 is self-explanatory and shows the relation between com-

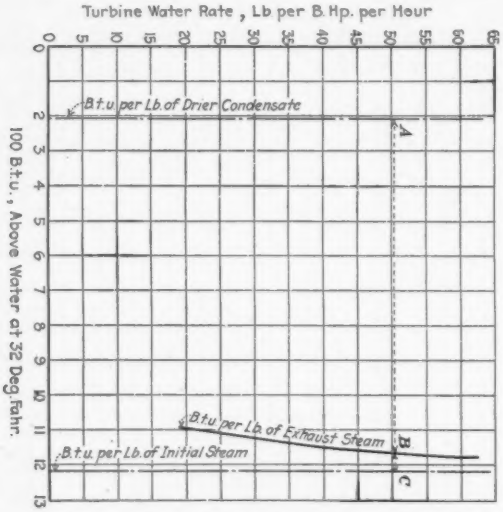
Turbine Water Rate, Lb per B.Hp. per Hour
0 5 10 15 20 25 30 35 40 45 50 55 60 65
B.t.u. per Lb. of Drier Condensate
100 B.t.u., Above Water at 32 Deg. Fahr.
2 3 4 5 6 7 8 9 10 11 12 13
A
B.t.u. per Lb. of Exhaust Steam
B.t.u. per Lb. of Initial Steam
B
C

FIG. 2—CURVE SHOWING B.T.U. PER POUND OF EXHAUST STEAM AVAILABLE FOR DRIERS

bined felt-days of the three presses and the cost per day, in dollars, for steam and felts. The calculated costs do not take into account the labor and the loss of production due to changing clothing. Further, this study only applies for a particular period of fixed steam and machine-clothing costs, and should be revised as conditions change.

Some plants, thinking to economize, have tried to dispense with drier felts. This procedure has not proved satisfactory, for the reason that intimate contact of the sheet with the drier surface is

TABLE 2. COST OF STEAM AND FELTS

Felt-days	% Moisture entering driers at end of period	Avg. % moisture for period	Period in days (1) ÷ 3	Moisture evap. per lb. of paper	Lb. steam per day F. & A. 212° F. (5) × 5400 × 24 × 1361 / 970.4	Cost of steam per day. Dollars. (6) × 0.75 / 1000	Cost of press clothing per day. Dollars	Cost of steam and felts per day. Dollars. (7) + (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
30	69.60	68.40	10.00	1.911	347,360	260.52	68.00	328.52
35	69.95	68.58	11.67	1.928	350,440	262.83	58.20	321.03
40	70.30	68.75	13.33	1.944	353,347	265.01	51.00	316.01
45	70.75	68.98	15.00	1.966	357,347	268.01	45.35	313.36
50	71.10	69.15	16.67	1.982	360,253	270.19	40.80	310.99
55	71.45	69.33	18.33	2.000	363,533	272.65	37.10	309.75
60	71.90	69.55	20.00	2.021	367,347	275.51	34.00	309.51
65	72.25	69.73	21.67	2.039	370,613	277.96	31.40	309.36
70	72.65	69.93	23.33	2.060	374,440	280.83	29.10	309.93
75	73.05	70.13	25.00	2.080	378,067	283.55	27.20	310.75
80	73.45	70.33	26.67	2.101	381,893	286.42	25.50	311.92
90	74.20	70.70	30.90	2.140	388,973	291.73	22.65	314.38
100	75.00	71.10	33.33	2.183	396,800	297.60	20.40	318.00
110	75.80	71.50	36.67	2.228	404,973	303.73	18.55	322.28
120	76.60	71.90	40.00	2.274	413,333	310.00	17.00	327.00

NOTE: 8 per cent moisture in dried paper. Steam cost assumed at $0.75 per 1,000 lb. No tests are available for moisture entering driers with complete new press clothing, but from a study of results which might be expected, it is assumed that moisture entering under these conditions would be 67.2 per cent.

of vast importance in heat transfer. The drier felt also assists in the removal of moisture.

It has been noted that a new drier felt results in a decreased steam consumption of about 300 pounds per ton of production as compared with an old one. This is due to the fact that as the felt ages, the meshes gradually become closed.

In investigating the action of the driers, that portion of them in intimate contact with the sheet has been termed the "effective" surface, while the remainder has been called "free" surface. In making comparisons between different machines the ratio of the effective surface to the total surface should always be stated.

The amount of radiating surface which does no direct useful work increases with the drier diameter, and to show the effect of diameter on effective surface, Table 3 has been prepared for a 166-inch drier with an actual working face of 156 inches. This table is of interest in connection with the design of modern machines, where the high speed required must be obtained either through large diameter of driers or the greater relative speed of those of smaller diameter.

TABLE 3. EFFECT OF DRIER DIAMETER ON EFFECTIVE SURFACE

Diam. of driers, ft.	Total surface in sq. ft. (T)	Effective surface in sq. ft. (E)	Ratio $\frac{E}{T}$
4	199	104	0.523
5	257	130	0.506
6	317	156	0.492

To obtain the maximum value of the ratio E/T, the drier section should be designed so as to obtain as large an arc of contact as possible, consistent with ease of handling paper and changing drier felts. Experience shows that with an open pit under the drier section the life of the felts is materially increased, owing to the better ventilation afforded.

There are two methods in general use for removing condensation from driers, namely, siphons and revolving dippers; and opinions are at variance as to which is to be preferred. Unfortunately,

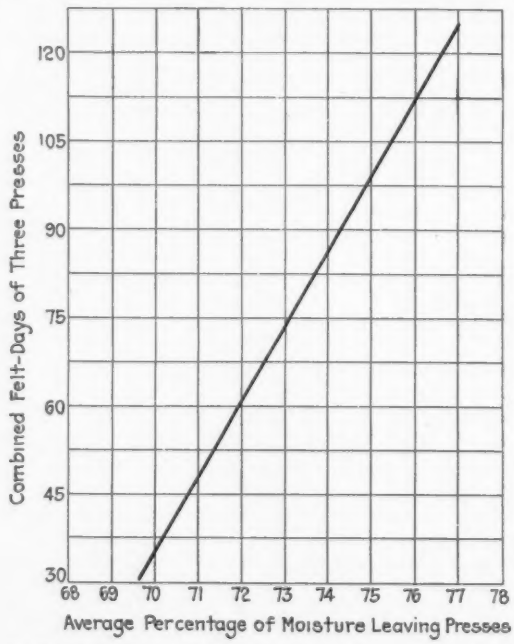

FIG. 3—CURVE SHOWING LIFE OF FELTS IN RELATION TO MOISTURE IN SHEET LEAVING PRESSES

neither system is capable of completely removing all the condensation, and there is always present a small depth of water in the bottom of the driers.

Owing to the fact that the machines must be operated from the front side, it is the practice to locate the inlet and condensation outlet in the back side of each drier. This arrangement does not

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permit of a uniform or rapid circulation of steam within the driers. It is the authors' opinion that some system whereby a more rapid circulation of steam were made possible, would increase to a considerable extent the heat transfer. This could be accomplished, if it were possible to connect a number of driers in series in such a manner that the circulation of steam would follow the desired temperature gradient.

Air and other incondensable vapors, allowed to accumulate in the

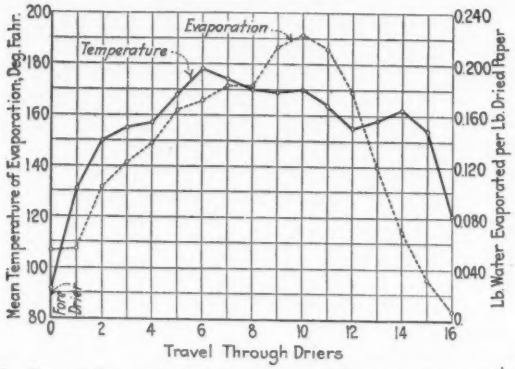

FIG. 4—CURVES SHOWING TEMPERATURE OF EVAPORATION AND WATER EVAPORATED IN DRIERS

driers, retard heat transmission and also result in unequal temperature across the drier face. A suitable air valve should be installed to permit of rapid extraction, without allowing steam to pass.

Absolutely clean internal surfaces are required to obtain maximum heat transfer. With engine-driven machines the internal surface of the driers becomes coated with a film of oil, as oil separators do not completely remove all the lubricant from the exhaust. The turbine, however, requires no internal lubrication, and is therefore superior to a steam engine as a prime mover. The external surfaces must also be kept clean of all accumulations of dirt, grease and lint from the paper.

Superheated steam, while undoubtedly of great value for prime movers, is not desirable for drying purposes, in that it is similar in its properties to gases and parts with its heat much less readily than saturated steam. No doubt some will contend that superheated steam would tend to become saturated by contact with the condensate, but it is thought that this would take place to a very limited extent. The amount of water in contact with the steam varying from time to time, would result in variations in temperature within the drier. Some expert papermakers contend that superheated steam produces an inferior quality of news print as compared with that dried by saturated steam.

The test of the drier part of the machine is given in Table 4. As shown by this table, 269,043 B.t.u. were absorbed by the driers, equivalent to 1,342 B.t.u. per pound of moisture evaporated. It will be shown later that the air in passing through the drier sections absorbed 272,837 B.t.u. per minute, equivalent to 1,361 B.t.u. per pound of moisture evaporated. The higher value has been used in subsequent calculations.

TABLE 4. TESTS OF DRIER

Working width, inches, (deckle)	156
Speed, ft. per min.	650
Effective heating surface, sq. ft.	4401
Total surface, sq. ft.	8272
Ratio of effective to total surface	0.532
Weight of paper (lb. per 500 sheets 25 × 36 in.)	32
Lb. paper dried per minute	90
Percentage of moisture in sheet entering driers	71.5
Percentage of moisture in sheet leaving driers	8.0
Lb. moisture evaporated per lb. of dried paper	2.228
Lb. moisture evaporated per minute	200.5
Steam pressure in driers, lb. per sq. in. abs.	23.7
Temperature of steam in driers, deg. fahr.	248.1
Total heat of steam supplied to driers, B.t.u. per lb.	1164.7
Heat of condensate, B.t.u. per lb.	205.1
B.t.u. absorbed by driers per lb. of steam	959.6
Lb. steam per hour to driers	16,822
Lb. steam per minute to driers	280.37
B.t.u. absorbed by driers per minute	269,043
B.t.u. absorbed by driers per lb. of moisture evaporated	1342

At the time that the test was conducted to determine the heat absorbed by the driers, data were also obtained giving the temperature gradient throughout the driers and the amount of moisture evaporated per pound of dried paper in each increment of travel, as shown by Fig. 4. By integration the theoretical amount of heat required to evaporate the moisture was determined, as shown by Table 5.

It will be noted in this table that 2.228 pounds of water were evaporated from the sheet in its complete travel, and that the theoretical heat required to do this work amounted to 2,412 B.t.u. Therefore, the theoretical heat required to evaporate one pound of moisture from the sheet, under the conditions as shown, is 1,083 B.t.u.

In making drier calculations it is well to remember that the only useful work performed is the evaporation of moisture from the sheet, and that therefore the theoretical amount, as determined by the conditions of the test, divided by the heat supplied, must give the efficiency of the driers.

Based on the figure of 1,342 B.t.u., determined by the drier test, the efficiency is 80.7 per cent, while on the basis of 1,361 B.t.u., derived from the air test, it is 79.6 per cent.

To dry paper efficiently the temperature conditions throughout the drier sections must be closely regulated. In the past, temperature control has been obtained by means of a thermostatic valve, which was dependent upon the temperature existing in one drier only. While this has given good results, the latest practice calls for sectional control, which has improved the ease of regulation.

TABLE 5. THEORETICAL HEAT REQUIREMENTS OF DRIERS PER LB. OF PAPER

Drier No.	Moisture leaving drier	% stock in sheet	Lb. water per 0.92 lb. stock	Lb. water evap'ted in travel through drier	Mean temp. of evap., deg. fahr.	Latent heat	B.t.u.	Heat of liquid
..	[1]71.5	[1]28.5	[2]2.308	.. ..	[1]80	....	....	....
Fore	71.0	29.0	2.254	0.054	92	1040.0	56.16	0.65
1	70.5	29.5	2.199	0.055	131	1018.2	56.00	2.81
2	69.5	30.5	2.096	0.103	150	1007.4	103.76	7.21
3	68.2	31.8	1.973	0.123	155	1004.5	123.55	9.23
4	66.6	33.4	1.835	0.138	157	1003.4	138.47	10.63
5	64.5	35.5	1.671	0.164	168	997.0	163.51	14.43
6	62.0	38.0	1.500	0.171	178	991.1	169.48	16.76
7	59.0	41.0	1.317	0.183	174	993.5	181.81	17.20
8	55.2	44.8	1.1336	0.1834	170	995.8	182.63	16.47
9	50.0	50.0	0.9200	0.2136	169	996.4	212.83	19.05
10	43.1	56.9	0.6969	0.2231	170	995.8	222.16	20.07
11	34.5	65.5	0.4846	0.2123	164	999.3	212.15	17.81
12	25.0	75.0	0.3067	0.1779	155	1004.5	178.70	13.34
13	16.9	83.1	0.1871	0.1196	158	1002.8	119.93	9.33
14	11.3	88.7	0.1183	0.0688	162	1001.1	68.88	5.64
15	8.6	91.4	0.0866	0.0317	154	1005.1	31.86	2.35
16	8.0	92.0	0.0800	0.0066	121	1023.9	6.76	0.27
Total	.....	.....		2.2280			2228.64	183.25

[1] Condition of sheet entering the drier.

Without suitable experimental equipment it is very difficult to proportion the total heat transfer into that quantity absorbed by the sheet and that acquired by the surrounding air. It is thought that these quantities, once determined, would be of great assistance to the designers of paper machines, as at present, so far as the authors are aware, all calculations are based on an arbitrary figure.

Heating and Ventilating

Ventilating air supplied to a machine room may be considered as serving three distinct purposes:

1.—It maintains such temperatures and humidities within the room that the operators may perform their work in comfort.

2.—During the period of low outside temperature it supplies sufficient heat to replace the radiation loss from the building.

3.—It acts as a carrier for the moisture liberated by the machine, so that this moisture is conveyed to the outside air without condensation taking place in the room.

The quantity of air supplied to a machine room depends to a large degree upon the desired machine-room temperature and humidity; and it will be found for the ordinary room, all other conditions

XUM

considered, that the quantity of air insuring greatest economy is largely exceeded. This practice is only adhered to because of the resulting comfort of the operators.

Even under the best conditions the temperatures found in a machine room are quite high. Particularly is this true in the vicinity of the roof and in monitors, where the average temperature may vary from 80 to 100 degrees Fahr. Further, the walls of a modern machine room contain a large glass area, resulting in a considerable heat transfer to the outside air. The radiation loss for the building under discussion may be calculated from the formula $y = 5.1 - 0.0583x$, where y is the radiation loss per pound of air in B.t.u., and x the outside or initial air temperature in degrees Fahr. This formula is based on an exhaust-fan discharge of 5,422 pounds of air per minute, and it shows that the radiation loss from the building makes a very appreciable demand upon the heating load for ventilation.

The air supplied for carrying away the moisture from the machine may be considered as ventilating the machine, apart from the ventilation of the room. This air, in its passage through the machine room, acquires from the wet end a certain amount of moisture, but no heat, and from the driers, both moisture and heat. It must, therefore, when expelled from the room, contain this moisture and heat, together with that which it contained when coming in contact with the machine. Provided, therefore, that the initial and final conditions of the air are known, and also its quantity per unit of time, the amount of moisture and heat liberated by the machine can be readily calculated.

In order to determine these quantities, so that they could be used as constants in further calculations, a test, previously referred to, was conducted on a still day in summer when the machine-room windows were all open and air of a uniform temperature was supplied to the room. The advantage of making this test in summer rather than in winter is apparent when it is considered that in winter considerable leakage takes place through openings from adjoining buildings and from the outside air, which renders it difficult to arrive at a representative value of the temperature and relative humidity of the incoming air. Also the outside temperature at the time being 83.3 degrees Fahr., the radiation loss from the building could be neglected without introducing any appreciable error. The results of this test are shown in Table 6.

In making this test the discharge of hot air from each of the stacks was determined by dividing their rectangular cross-section into 24 equal divisions, and the velocity at the center of each of these divisions was determined by means of an anemometer. Wet- and dry-bulb temperatures were taken at the same time, and the discharge as computed in cubic feet per minute was converted into pounds per minute. Carrier's psychometric charts were used to determine the moisture per pound of dry air and the total heat above 0 degree Fahr. per pound of air. These charts were of great assistance in simplifying the calculations.

It is thus seen that the quantity of heat given up by the driers per minute as calculated on the ventilating-air basis, checked that as calculated on a steam basis within 1.5 per cent.

TABLE 6. VENTILATING-AIR-TEST

	Stack No.	Dry-bulb temp., deg. fahr.	Wet-bulb temp., deg. fahr.	B.t.u. per lb. of air above 0° F.	Grains moisture per lb. dry air	Lb. air per min.	Lb. dry air per min.	Lb. moisture in air	B.t.u. above 0° F. contained in air
Final air in stack.....	1	110	108.5	85	396	1788	1692	96	151,980
	2	118	107.0	82	360	1766	1680	86	144,812
	3	121	113.0	95	445	1868	1756	112	177,460
Total.....						5422	5128	294	474,252
Initial air entering room...		83.3	76	38.6	123.3	5218	5128	90	201,415
Difference in moisture and heat content between final and initial air.....								204	272,837

The difference between the moisture acquired by the air, 204 pounds, and that liberated by the driers, 200.5 pounds, can, in the opinion of the authors, be reasonably taken as the amount of moisture acquired by the ventilating air from the wet end of the machine, and in this case amounted to 3.5 pounds, or less than 2 per cent of the total.

When, therefore, the machine is operating at 650 feet per minute, and 5,422 pounds of air are expelled by the exhaust fans, the heat given up by the machine per minute is 272,837 B.t.u., and the moisture liberated in the same time is 204 pounds.

If then values are assumed for the initial air condition, it is possible, by utilizing the above figures, to determine the final moisture and heat content of the air per pound, and by comparing the heat content of air containing this moisture with that of air containing the same moisture and at saturation, or 80 per cent relative humidity, it is possible to determine to what degree the initial outside air must be heated before entering the machine room, in order that it may function properly.

It must be borne in mind that the above statement presupposes that for low outside-air temperatures the ventilating air is preheated before admission to the machine room. Consequently, upon reaching the machine its temperature will be practically the same as applied when the test was made, and therefore the heat transfer from the driers, and the moisture absorbed from the wet end, will not, for practical purposes, be changed.

Table 7 has been prepared on a basis of initial air at 70 per cent relative humidity. From this table Fig. 5 has been plotted, which serves the purpose of estimating the machine heating load for various outside temperatures.

By referring to Fig. 5, it is seen that for the ventilation of the machine only, there is some critical temperature, in this case 66 degrees Fahr., below which the outside or initial air must be preheated before coming in contact with the machine. In practice, however, this critical temperature would be slightly higher, as it is not common practice to expel the air from the machine room at a

TABLE 7. SHOWING CHANGE IN AIR CONDITION WHILE PASSING THROUGH THE MACHINE

Initial Air Condition								Absorbed From Machine			Final Air Condition						
Temperature °F.	% Relative Humidity	Gr. Moisture per lb. of dry air	Heat above 0 °F. per lb. of air, B.t.u.	Lb. of air per min	Lb. dry air per min	Total moisture, lb.	Total heat, B.t.u.	Moisture from wet end, lb.	Moisture from driers, lb.	Heat from driers, B.t.u.	Total air, lb.	Total Moisture, lb.	Dry air lb.	Gr. moisture per lb. of dry air	Heat above 0 °F. in total air, B.t.u.	B.t.u. per lb. of air	B.t.u. per lb. of air, 100% R. H. and same moisture	B.t.u. per lb. of air, 80% R. H. and same moisture
—20°	0	0	—4.8	5218	5218	0	—25046	3.5	200.5	272,837	5422	204	5218	274	247,791	45.7	64.5	66.3
+10	70	6.5	2.5	5218	5213	5	13045	3.5	200.5	272,837	5422	209	5213	280	285,882	52.7	65.5	67.1
30	70	17.0	9.75	5218	5205	13	50876	3.5	200.5	272,837	5422	217	5205	292	323,713	59.6	67.5	69.0
40	70	25.6	13.6	5218	5199	19	70965	3.5	200.5	272,837	5422	223	5199	301	343,802	63.3	69.0	70.5
50	70	37.3	17.9	5218	5190	28	93402	3.5	200.5	272,837	5422	232	5190	313	366,239	67.5	70.7	72.4
60	70	54.0	22.8	5218	5178	40	118970	3.5	200.5	272,837	5422	244	5178	330	391,807	72.2	73.3	75.2
70	70	76.0	28.3	5218	5162	56	147669	3.5	200.5	272,837	5422	260	5162	353	420,526	77.5	76.8	79.0
80	70	107.0	35.6	5218	5140	78	185761	3.5	200.5	272,837	5422	28	5140	384	458,598	84.5	82.3	84.2
90	70	149.2	44.2	5218	5110	108	230636	3.5	200.5	272,837	5422	312	5110	427	503,473	92.7	89.4	91.6

TECHNICAL SECTION, PAGE 161

relative humidity (R. H.) as high as 100 per cent. If the final air had a relative humidity of 80 per cent, the critical temperature would be 78 degrees Fahr.

By combining the quantity of heat per pound of air required by the machine with that necessary to replace the radiation loss from the building, the total heat per pound of air required for the purpose of ventilation can be determined.

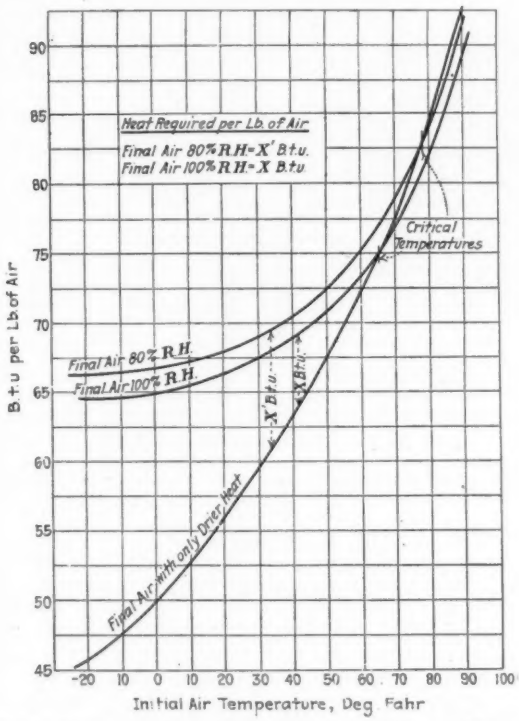

FIG. 5—CURVES SHOWING HEAT REQUIRED FOR PAPER-MACHINE VENTILATION

The important factor which influences the ventilating requirements of a paper mill is the amount of moisture liberated by the machine per unit of time. This in turn is dependent upon:

1.—Speed of the machine.
2.—Moisture in sheet entering the driers.
3.—Moisture in sheet leaving the driers.
4.—Moisture absorbed from the wet end.

The old practice, therefore, of specifying paper-mill ventilation on a basis of so many minutes air change, without due regard to the moisture liberated, is not correct, as it is obvious that the amount of moisture liberated in two machine rooms of the same size might be entirely different.

Much of late has been written regarding the proper distribution of air in the machine room, but it is not the intention of the authors to discuss this further, except to state that, in their opinion, the greater part of the ventilating air should be delivered in the vicinity of the driers and the wet end, so that the moisture may be confined at its source. Further, that sufficient warm dry air should be supplied to the roof and all pockets, such as monitors, in order that the moisture-laden air shall not become chilled below the dewpoint, causing drip.

The amount of heat lost to the process by the expelled ventilating air is in all probability the greatest unpardonable waste in the manufacture of paper.

By referring to Table 7, it can be seen that, with initial air at 10 degrees Fahr., and of 70 per cent relative humidity, the total heat above zero degree Fahr. is 2.5 B.t.u. per pound, and the heat content of a pound of final air at 100 per cent relative humidity is 65.5 B.t.u. above 0 degree Fahr., the difference in the heat content per pound of air being 63 B.t.u.

Only 12.8 B.t.u. per pound, however, have to be furnished in order to preheat the incoming air, the balance of this difference being supplied by the driers. It is here that an economizer could be used to great advantage in reclaiming from the expelled air enough heat to condition the incoming air.

Owing to the high relative humidity of the outgoing air, a few degrees' drop in temperature in the economizer would be sufficient to supply heat necessary to preheat the incoming air, with the result that no live or exhaust steam would be required for ventilation.

The saving in operating cost which would result in winter from such an installation is apparent when it is considered that, for the conditions under consideration, at least 5,900 pounds of dry steam, at 10 pounds per square inch pressure, would be required per hour for preheating the ventilating air when the outside temperature was 10 degrees Fahr. and the relative humidity 70 per cent.

Fig. 6 shows for the period of one year the manufacturing and heating load in pounds of steam per ton of product, also the mean monthly temperature which prevailed. It is interesting to note the relative importance of the heating load, and it can be readily realized that the manufacturing cost could be considerably reduced if, by the installation of an economizer, this were done away with.

Conclusion

This paper does not make a complete survey of the subject under discussion, but the authors, in seeking to collect material for

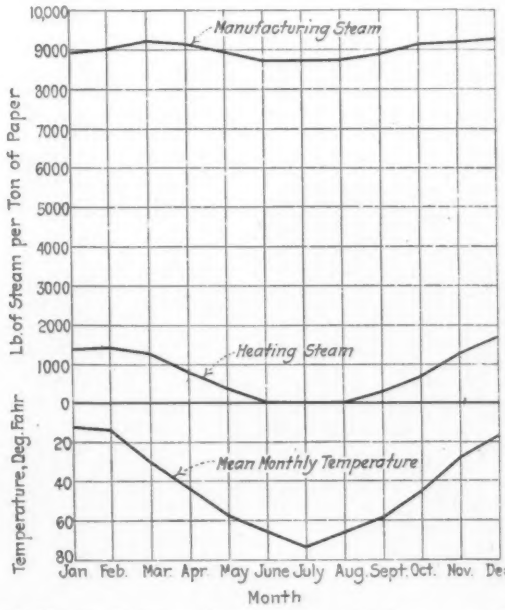

FIG. 6—CURVES SHOWING TEMPERATURE AND STEAM FOR MANUFACTURING AND HEATING, BY MONTHS

the subject-matter, have been impressed with the lack of detailed information which is available. It may be that some mills have studied their problems in great detail, but if so, the information is treated as strictly confidential. It can be understood that, once a paper machine is installed, the owners are reluctant to decrease production while making experimental tests. Therefore, paper-machine manufacturers are unable, in certain respects, to procure reliable operating data upon which to base their designs.

TRIMBEY AND TIBBITTS PROPORTIONING AND METERING SYSTEM FOR PAPER STOCK*

By E. J. Trimbey, Trimbey Machine Works, Glens Falls, N. Y.

The paper mill equipped for using its own pulp in the form of soft stock has had distinct advantages over its competitors who used lap pulp, as regards cost of handling, but the savings made in this manner have been partly offset by the loss due to the use of more than the necessary amount of the more expensive sulphite caused by variations in the proportions of the stock mixture used.

When using lap pulp the furnish can be weighed but with soft stock proportional volumes must be the measure and changes in the consistency of one or of both of the pulp ingredients cause wide variations in the proportions used. For a number of years the up-to-date mills have used automatic consistency regulators which satisfactorily control the addition of the proper amount of water at the suction side of the stock pump to give pulp of a uniform consistency for beater or mixing tank furnish.

In most mills the mixing tank is also used as a measuring tank, gauges being placed on the sides of the tank to indicate the amounts of each kind of pulp to be used in each batch. These tanks require the constant attendance of one or more men and the accuracy of the furnish even with uniform consistency is dependent upon the care with which these men perform their work and there is no certainty as to how much of each kind of pulp has been used. From the accountant's standpoint the only information available at the end of the week or month is that so many tons of paper have been made, so many "cooks" of sulphite blown, and so many cords of wood delivered to the ground wood mill. It is practically impossible to compute yields per cord, or if more than one grade of paper is being made, to accurately separate the pulp furnish to arrive at actual costs of the different grades. It would seem that where soft stock is used refined accounting systems to determine

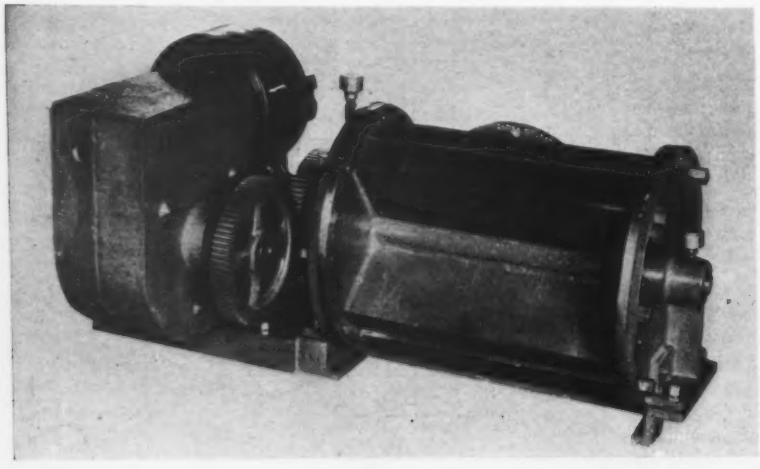

Fig. 1

costs must be more or less of a waste of time and money as long as the stock proportions are left to the good judgment and care of the beater room attendant with no check on consistencies or volumes used.

Construction of Units

The complete units for ground wood, for sulphite and for color, etc., are mounted on a wooden base with a mixing compartment beneath. The stock discharged from the two meters flows together over suitable baffles and with the color, alum, etc., is quite thoroughly mixed before going to the machine storage chest or to the jordans.

The stock meters are driven through worm and spur gears from

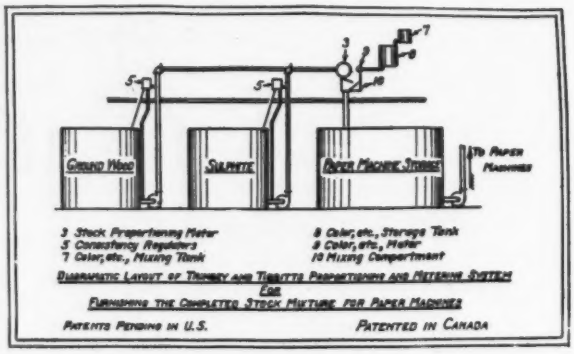

Fig. 2

D. C. motors having a speed range of 2:1 and all three motors are supplied from a motor-generator set provided with a suitable rheostat for giving a further speed range of 2:1, making an extreme range of 4:1 in the motor speeds. By shifting the rheostats on the individual motors any desired proportions of ground wood and sulphite can be secured and the color, alum, etc., can be varied individually by screw-adjustment without shutting down the motor driving this group of small meters.

With proportions once set, the speed of all motors can be increased or decreased at the same time and in the same proportion by shifting the rheostat on the generator, thus giving a ready means of varying the total supply to meet the demands of the paper machine or machines. At the same time if a change in furnish is wanted, any one of the ingredients can be changed without shutting down and without changing the others.

The system as furnished consists of suitable meter units mounted together, the motor-generator set and a slate switchboard with all the necessary switches and control apparatus.

Value of Meters and Regulators

With stock of a given consistency and a record of the volumetric amounts used as given by the recording counters, the accounting department has data which can be used, and the operating end of the mill secures, through the use of the meters and the consistency regulators, a uniform furnish with increased production and improved quality.

Where the problem is to add a given weight of pulp in the form of soft stock to each meter, the meter unit with its motor drive is located above the beaters so that the stock as metered will flow by gravity. In this case the motor runs at full speed when in use and is controlled by means of a magnetic switch with push button con-

(*Continued on page* 64)

* Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922.

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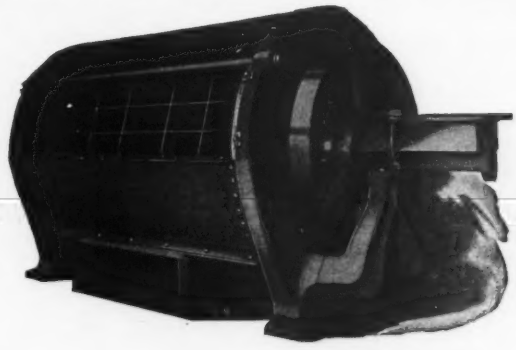

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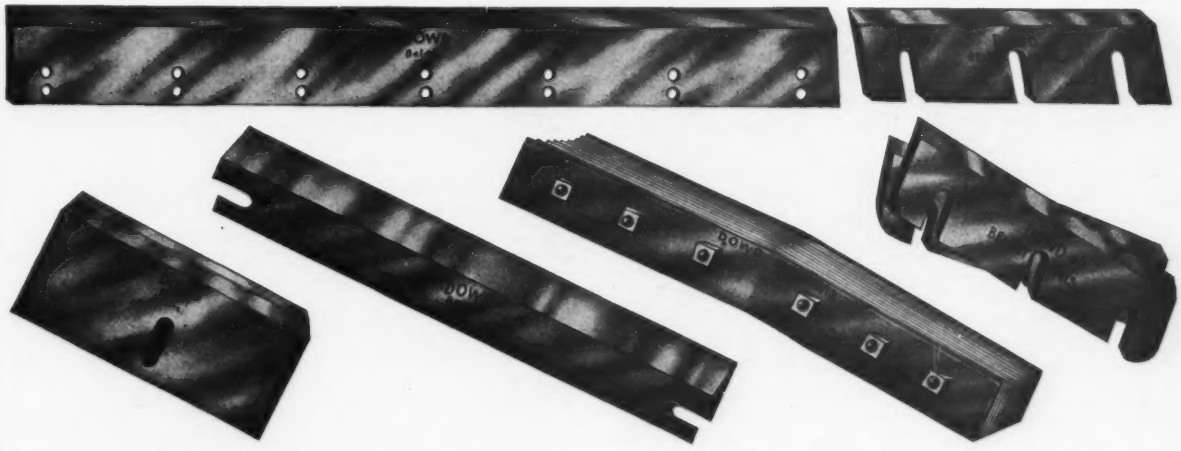

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CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Properties, Chemistry and Testing of Raw Materials and Finished Products

Determination of Cellulose in Wood By Means of Chlorine in Carbon Tetrachloride.—Emil Heuser and H. Casseus. *Papierfabr.*, xx, Fest. u. Auslandheft, 80-93 (1922). Abridged. Translation by C. J. West in PAPER TRADE J., lxxv, No. 9, 47-48 (Aug. 31, 1922). The Cross and Bevan chlorination method is simplified by using a solution of chlorine (8.10 g.) in carbon tetrachloride (100 g.). The wood should be ground to a meal of medium fineness; too coarse particles are unevenly attacked, and too fine particles interfere with subsequent filtrations. The fats and resins need not be extracted. The testing was carried out in a special apparatus consisting of a short wide cylindrical separating funnel, the lower part of which is ground to fit the upper part of a Gooch crucible. It is detached for shaking and attached for filtration and extraction. About 1.5 g. of wood is treated with 50 g. of the chlorine solution. Three chlorinations are carried out. After each chlorination the carbon tetrachloride is filtered off, and the residue is washed with alcohol and with water and is then treated with a 2 per cent sodium sulphite solution. Extremely concordant results were obtained.—I. G.

Use of "Pickerel-Weed" for the Manufacture of Pulp. P. A. I. Golmann. Fr. patent 2,525,172. *Mon. Papeterie Française*, liii, 127-128 (March 1, 1922).—Claims the use of "Pickerel-weed" (Pontederia cordata) as a raw material for the manufacture of textiles or of paper pulp.—A. P.-C.

The Differentiation of Hemps, Flaxes, and Other Fibers and Textiles.—*Papeterie*, xliv, 633-637 (July 25, 1922).—A table is given of the color reactions of various grades of hemp, flax, and other textile fibers, and of chemical wood pulps, with a solution of: phloroglucinol 1.26 g., water 1,000 cc., concentrated hydrochloric acid 200 cc. Observations need not be made under the microscope. —A.P.-C.

Paper Pulp from Straw. C. and J. Bache-Wiig. U. S. A. patent 1,418,353 (June 6, 1922).—The straw is softened by means of a salt solution, subjected to a kollergang treatment, digested with sulphite solution, and given a second kollergang treatment. It is then ready for paper making.—I. G.

The Chemical Analysis of Paper Pulp. F. M. Bouvier. *Mon. Papeterie Française*, liii, 170-171, 198-199, 211-222 (April 1 and 15, May 1, 1922). Brief descriptions of the methods of determining moisture, ash, cellulose, lignin, resins, fats and waxes, gums, free acidity, copper number, aldehyde number, acid number, SO_2 number (the amount of SO_2 required to decolorize the amount of fuchsin fixed by 100 g. of pulp), free and combined chlorine, and sulphur compounds.—A. P.-C.

Determination of Free Chlorine and Hypochlorous Acid in Concentrated Salt Solutions. M. C. Taylor and C. A. Gammal, Mathieson Alkali Works. *J. Ind. Eng. Chem.*, xiv, 632-636 (July, 1922).—The method described involves three steps: (1) Determination of the "available" (free chlorine and chlorine as NaOCl and HOCl) chlorine in the sample with potassium iodide and thiosulphate, using a known excess of standard acid; (2) Determination of the excess of acid remaining after the thiosulphate titration by titrating the iodine liberated from Kjeldahl's solution (a mixture of potassium iodate and iodide; (3) An aeration step in which the rate of washing of free chlorine is accurately measured. The method and the accuracy of the results are discussed at some length.—A. P.-C.

Bleaching By Means of Chlorine and Chlorine Compounds. —R. Fournier. *Papier*, xxv, 253-257, 296-301. (June and July, 1922).—A general description of the properties of chlorine bleaching compounds and of their utilization in the paper industry.— A. P.-C.

Aluminum Compounds for Sizing Paper. G. Muth. Ger. patent 345,315. Addition to Ger. patent 319,420. The treatment of aluminum compounds as described in the chief patent is more expeditiously carried out in closed vessels under a high temperature and pressure.—I. G.

Testing the Sizing of Paper. D. Monreaux. *Mon. Papeterie Française*, liii, 216-218 (May 1, 1922).—The author suggests the following method: Draw three lines of equal length but of increasing thickness by means of a round-pointed (Leonardt) pen, and note the time of drying of the various lines or portions of lines. When all the lines are dry, observe the time of drying of the line or portion of line which has penetrated to the other side of the paper. It would also be necessary to note the atmospheric humidity, as it has a very appreciable effect on the results of the test.—A. P.-C.

Rational Use of Filter Papers. E. J. Guild, Chief Chemist, W. and R. Balston, Ltd. *Chem. Trade J.*, lxx, 721-722 (June 16, 1922.)—A brief discussion of the qualities of filter papers, with practical hints as to choosing the proper grades for various classes of work.—A. P.-C.

Wood Preparing and Equipment

Barking Drum. H. T. Holm. Can. patent 221,886, Aug. 8, 1922.—The drum consists essentially of a solid cylindrical metal shell, the inlet opening of which is smaller than the outlet. One or more jets of water are provided, entering at the inlet in a more or less axial direction. Oblique ribs are secured to the inner side of the shell. The bark is suitably separated from the water, which is then used over again.—A. P.-C.

Acid Processes of Pulp Manufacture and Equipment

Estimations of Sulphur Dioxide.—G. Basil Barham. *Chem. News*, cxxiv, 279-281 (1922; *Chem. Soc. Abs.*, cxxii, Pt. 1, 520 (July, 1922). Titration with potassium permanganate under definite conditions is recommended for the estimation of SO_2. Dilute sulphuric acid is treated with a definite volume of standard permanganate, and the mixture is then divided into two equal portions; the SO_2 solution under examination is added to one portion and the permanganate solution is added until the coloration is again equal in intensity to that of the other portion which has been reserved for comparison. To ensure the coloration being of the same tint, the acid solution should be reduced and oxidized once or twice (with sulphite and permanganate solutions respectively) before it is used for the actual determination.—A. P.-C.

Decomposition of Sulphite Waste Liquor. K. Morch. U. S. A. patent 1,415,843, May 9, 1922. Same as Can. patent 221,733, Aug. 1, 1922.—I. G.

Utilization of Sulphite Waste Liquor. E. Muerbe. Ger. patent 347,658. Addition to Ger. patent 344,955.—On entering the separator described in the main patent (See this journal, lxxiv, No. 21, 59, May 25, 1922,) the liquor is mixed with a substance, such as sodium bisulphate, in a finely divided form, which assists the liberation of SO_2. Suction is applied to the condenser to prevent back pressure. Nearly 30 per cent of the sulphur present in the original liquor can be recovered in a useful form. Almost

TECHNICAL SECTION, PAGE 164

ROGERS WET MACHINE

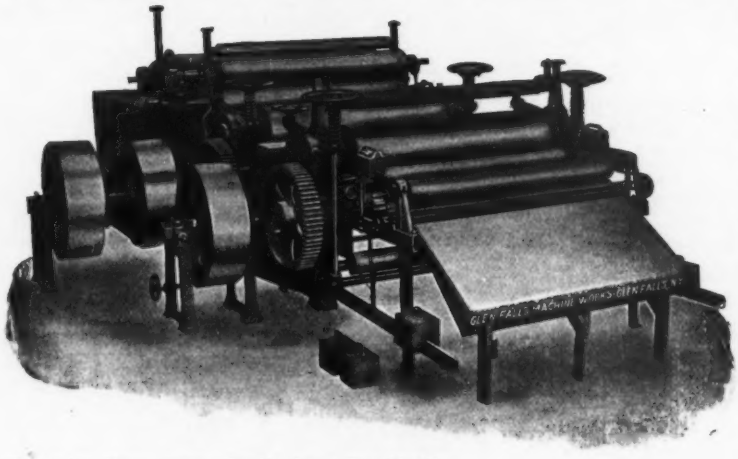

Illustration Shows Rogers Double Press Wet Machine

FOR CHEMICAL PULP—including Sulphite, Sulphate, Soda, also Cotton and Waste Paper fiber.

TYPES—Single and Double Press 72" wide.

CAPACITY—either type 25-30 tons air dry stock per 24 hours.

SHEETS produced by the Double Press Machine uniformly 48% dry. By the Single Press Machine uniformly 40% dry. There is no fold to contain excessive moisture. Sheets are handy size, 33"x36", and are folded once into most convenient bundles for storage, for the beater or for shipping. By this great capacity, high dry test, small amount of floor space per ton pulp produced, exceedingly low cost for labor and maintenance, users are assured that the machine will completely pay for itself within one year, and are promised a handsome return on their investment.

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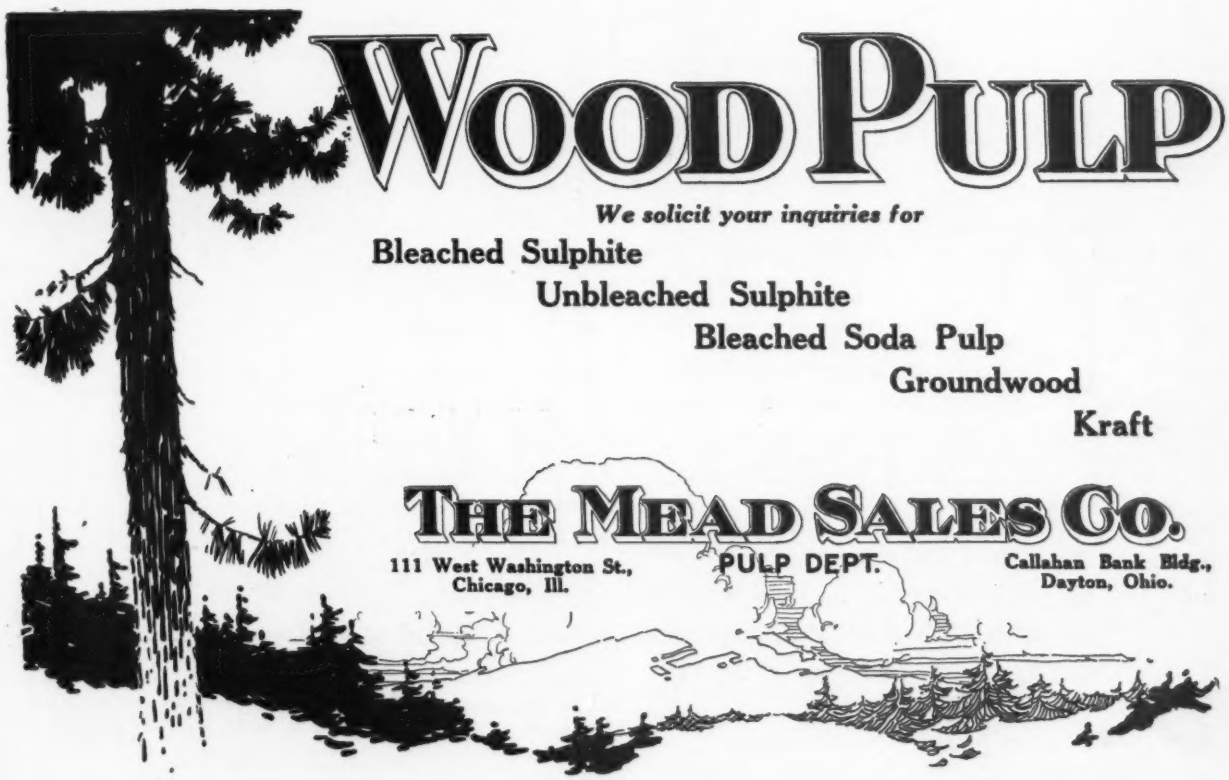

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perfect separation is obtained of free and loosely-combined SO_2, and also of that combined with lime. All the calcium present is recovered as calcium sulphate in a finely divided state.—I. G.

Paper Machine Press. R. E. Wagner, assignor to Aktiebolaget Karlstads Mekaniska Verkstads. Can. patent 221,949, Aug. 8, 1922. The rolls are provided with circumferential grooves and suction is applied by a suitable device adjacent to the surface of one or both rolls and projecting into the angle between the roll and the web.—A. P.-C.

Asphalt Shingle Roofing and Machine for Making Same. J. T. Sullivan, Can. patent 221,937, Aug. 8, 1922. In surfacing the roofing with crushed stone, etc., uncovered lines are left on the saturated felt. The finished roofing is not cut into separate shingles but is applied in strips, the lines giving the same effect as separate shingles.—A. P.-C.

Translucent Paper. F. W. Hochstetter. U. S. A. Patent 1,419,379, June 13, 1922. Paper is rendered translucent by treatment with a composition containing 10 parts of linseed oil or any other similar drying oil, 3 parts of bleached shellac, and 20 parts of absolute alcohol.—I. G.

Rendering Paper and Paper Containers Greaseproof. W. L. Wright, assignor to Sealright Co. U. S. A. patent 1,417,708, May 30, 1922. The paper material is coated by means of a nearly saturated sugar solution containing an appropriate amount of a soluble adhesive.—I. G.

Articles Produced from Pulp and Paper

Method of and Apparatus for Making Pulp Articles. M. Jaegar, assignor to Anchor Cap and Closure Corporation. Can. patent 221,953, Aug. 8, 1922. The pulp is supplied to a wire mold by forcing it by means of compressed air. When the article is sufficiently built up, compressed air is admitted to the inside of the mold, thus compacting and drying the fibers. The drying may be hastened by using hot compressed air.—A. P.-C.

Machine for Making Paper Bags. L. W. Welsford, assignor to J. G. Gates. Can. patent 222,048, Aug. 8, 1922.—A. P.-C.

Resins and Resinous Substances from Cellulose. Zellstoffabrik Waldhof and V. Hottenroth. Ger. patent 353,380, May 16, 1922. Cellulose is treated with acids such as sulphuric to convert it into products of a resinous character. The residues are converted into a decolorizing carbon.—I. G.

General

Method of Making Emulsions.—J. A. De Cew, assignor to Process Engineers, Ltd. Can. patent 218,270, May 2, 1922.—The substance to be emulsified is brought into contact with an alkaline solution under pressure in an atomizer at about 180° F., the amount of alkali being insufficient to produce complete saponification. The emulsion is then cooled by mixing with cold water. The process is suitable for the preparation of sizing "solutions."—A. P.-C.

List of Abbreviated and Full Titles and of Addresses of the Journals from Which Abstracts Have Been Prepared for This Issue

Chem. News.....The Chemical News and Journal of Physical Science. 97 Shoe Lane, London, E. C. 4, England.
Chem. Soc. Abs.....Journal of the Chemical Society—Abstracts. Gurney & Jackson. 33 Paternoster Row, London, E. C. 4, England.
Chem. Trade J.....Chemical Trade Journal and Chemical Engineer. Davis Bros., 265 Strand, London, W. C. 2, England.
J. Ind. Eng. Chem.....The Journal of Industrial and Engineering Chemistry. H. E. Howe, 810 Eighteenth St., N. W., Washington, D. C
Mon. Papeterie Française..Le Moniteur de la Papeterie Française 154 Boulevard Haussmann. Paris, France.
Papier .....Le Papier. 16 Rue du Rocher, Paris (8°), France.
Papeterie.....La Papeterie. 9 Rue Lagrange, Paris (5°), France.
Paper .....Paper. 251 West Nineteenth St., N. Y City.
Paper Ind.....The Paper Industry. 356 Monadnock Block, Chicago, Ill.
Paper Trade J.....Paper Trade Journal. 10 East Thirty-Ninth St., New York City.
Papierfabr .....Der Papier-Fabrikant. Otto Elsner, Oranienstr. 140-142, Berlin, S. 42, Germany.
Pulp and Paper.....Pulp and Paper Magazine of Canada. Gardenvale, Que.
Wochbl. Papierfabr.....Wochenblatt für Papierfabrikation. Güntler-Staib in Biberach a. d. Riss, Württemberg, Germany.

TRIMBEY AND TIBBITS SYSTEM

(*Continued from page 60*)

trol and with a graduated dial and tripping device. With the supply controlled by a consistency regulator each revolution of the meter gives a known amount of stock and the number of revolutions necessary per beater is computed from the furnish formula. The attendant sets the dial to this number, opens the valve and presses the "start" button and is then free to go about his other duties; as the meter revolves the dial returns and when the proper number of revolutions has occurred the tripping device registers on the "stop" button and the motor is shut off. The dial and tripping device can be placed where they will be conveniently located for the attendant while the meter can be located some distance above the floor and supply two or more beaters.

By the use of this meter and consistency regulators soft stock to beaters can be controlled as accurately as though the furnish were in laps, and where all soft stock is used and a beating or brushing

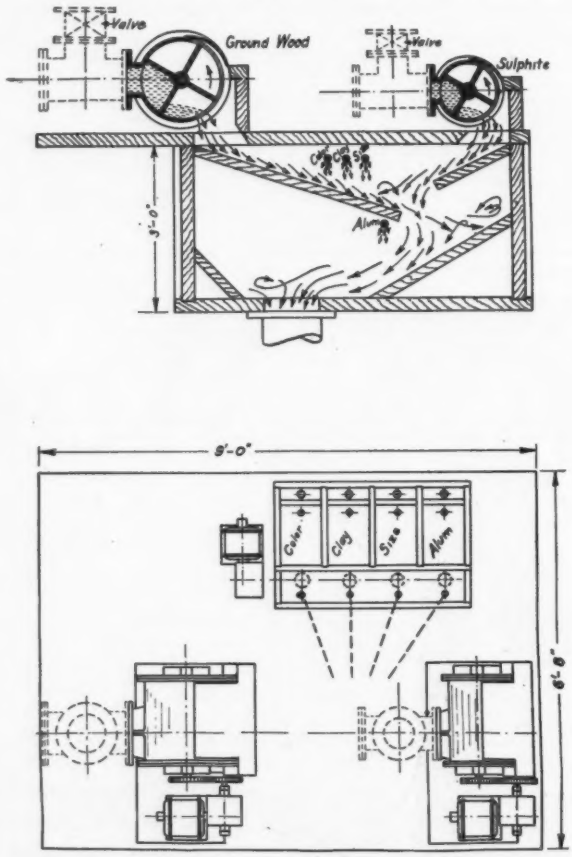

FIG. 3

action is not essential, as in the manufacture of news print, the advantages of this proportioning and metering system over intermittent mixing tanks or beaters are,—savings in floor space, power, labor and maintenance, together with exact proportions, uniform consistency and a record of the amounts of each kind of stock used.

Proportioning and metering systems are made in various sizes up to 350 tons per day capacity.

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New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, SEPTEMBER 27, 1922.

At the meeting of the newspaper publishers of New York last week, the assemblage failed to come to any conclusion regarding the recommendation of the A. N. P. A. that a 10 per cent reduction in the use of news print paper be put into effect. After a fruitless discussion as to whether the cut should be made in the advertising columns or in the volume of news matter, it was decided to take no action whatever as a group, leaving the solution of the matter to each individual publisher. As a result of this failure to agree, news print consumption will, undoubtedly, continue at the rapid clip it has been maintaining in recent months. Besides the fact that there are 338 new advertisers in the newspapers of the A. N. P. A. this year, special editions and feature pages are swelling the normal sizes of newspapers the country over. And then, new papers are coming into existence from time to time, as is witnessed by the establishment of the Syracuse *Telegram*, a Hearst publication, Monday of this week.

The demand for nearly all grades of paper during the past week has been exceptionally strong—in many cases exceeding the supplies available. As a result most of the paper markets have continued firm and the price tone has stiffened up proportionally. Pulp is moving into the limelight with substantial price increases, paper stock braced up considerably after slumping off the week before, and tissue supplies were as scarce as ever. From all indications the balance of the fall and winter should bring an unprecedented period of substantial business to nearly every branch of the industry.

News print consumption still appears to be on the increase and although the *Fourth Estate* reassures publishers that there is no occasion for alarm or a runaway market owing to the fact that there is nothing to indicate a shortage of news print for the balance of this year or for the year 1923, the latter are, in the main, inclined to play safe by covering at least the remainder of their 1922 requirements at prices which are still under four cents a pound. It has been freely predicted in news print circles that the last quarter would usher in a price of four cents for standard roll news in car lots.

Tentative book paper prices have been announced by some of the manufacturers, but the majority are still withholding their new schedule of prices until the ultimate outcome of the strike situation may be determined. Meanwhile, the demand for all grades of book is increasing tremendously. Dealers believe that the present month will turn out to be the record breaking month of the past two years or more in point of book paper consumption.

The same situation with regard to prices obtains in the fine paper market as in that of book paper. The business outlook in the fine paper trade looks more promising each week. The export business has picked up to an appreciable extent recently, but mills are finding a ready outlet for their product in the dealers of this country, whose stocks are still too low properly to cope with the volume of fall trade.

The harvest season for tissue men has just started, and dealers are now handicapped only by their inability to get sufficient supplies from the mills. Ream quotations are stiffening up for from two to four cents each week that goes by under cover of the general price withdrawal which still is in effect. The fall clothing trade is clamoring for tissue, and mills are grinding out the commodity and shipping it as well as their crippled facilities will permit.

Corresponding with the increase in the prices of kraft pulp, and other grades used extensively in the manufacture of wrapping paper, the cost of the finished product is expected to reflect this advance within a week or ten days. Wrapping paper mills are once more able to get enough coal to continue operations, but they are forced to pay ridiculously high prices for it.

Board manufacturers are flooded with so many orders that, as one dealer phrased it, "if they keep coming in they'll have to enlarge their filing systems to hold them all." The fact that quotations have been resumed in this market, even upon a nominal basis, may be taken as an indication that conditions are steadying up. Mills have enough orders on hand now to keep them running full blast for at least the remainder of the present year, and it looks as though the demand had come to stay.

Mechanical Pulp

Brisk business has characterized the ground wood market of the past week, news print mills in particular buying and using large quantities of mechanical pulp. Board mills are running a close second in the consumption of ground wood pulp, and the price level of $30 to $31 per ton f. o. b. producer's plant has continued to rule. The general undertone of the market is firming up and grinders anticipate a higher scale of prices for the last two months of this year. The New York price of Canadian ground wood, prime spruce fiber, has ranged from $33 to $34 via water shipment. The commodity is growing increasingly scarce despite the favorable conditions which prevailed throughout the "dry" season, and several New York dealers were reported to have turned down orders for immediate shipment owing to the fact that sufficient supplies of ground wood were unavailable.

Chemical Pulp

The greatly increased consumption of chemical pulp within the past few weeks has begun to make dents in the large reserve stocks of nearly every grade of pulp that accumulated druing the comparatively quiet season preceding. Prices are firming almost daily and the price of 4.25 cents a pound, f. o. b. producer, is being asked and received for both No. 1 imported and domestic bleached sulphite. While domestic kraft pulp is now being listed at 2.65 to 3.00 cents a pound, f. o. b. mill, the imported kraft is holding in the neighborhood of $52 and $53 per ton.

Old Rope and Bagging

Although real buying activity has not yet arrived in the old rope market, the situation has taken a promising turn in the last few weeks in that inquiries are much more plentiful and the general undertone of the market has been strong. Dry old domestic Manila rope has sold for as high as 6.25 cents a pound, and this has been given the preference over foreign grades. Mixed strings are maintaining an even price tone and are in regular demand.

Bagging, especially roofing bagging, has continued in good demand, being, in fact, the highlight of the entire market. Both fine paper and tissue manufacturers are expected to require increasingly larger quantities of scrap, which has been quoted at prices ranging from 1.05 cents a pound to 1.15. Prices are expected to harden appreciably when this consumption actually materializes.

Waste Paper

The temporary easing up which occurred in the waste paper market last week proved to be of a transitory nature when mills re-entered the market for paper stock paying prices equivalent to those which ruled during the preceding week. Manufacturers are expected to broaden the scale of their buying in keeping with the pronounced expansion of their business, and prices even higher than those which prevailed several weeks ago are promised for the near future.

Rags

A substantial volume of business has been accruing to cotton rag merchants, the purchases of roofing felt manufacturers greatly augmenting the extent of sales. Whites have been moving along to consumers in goodly quantities and blues have been holding their own at 1.60 cents a pound in carload lots or from 1.75 to 1.90 repacked. Prices have ruled firm on specialty grades of rags and the demand continues to be active.

Twine

When the supplies of twine that are now clotting the market, manufactured from raw materials bought at the old scale of prices, are finally used up, dealers look for a substantial boost in prices of the finished product. This is expected to come any week.

XUM

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations September 26, 1922:

	BID	ASKED
American Writing Paper Company, pref.	33½	34
International Paper Company, com.	56¾	57
International Paper Company, pref., stamped	78	79¼
Union Bag & Paper Corporation	73½	74½

Paper

F. o. b. Mill.

Ledgers, Bonds, Writings—Extra Superfine, Superfine, Tub Sized, Engine Sized	All quotations withdrawn	
News—f. o. b. Mill—		
Rolls, contract	3.75	@ 4.00
Rolls, transit	4.00	@ —
Sheets	4.00	@ —
Side Runs	3.25	@ 3.50
Book, Cased—f. o. b. Mill		
S. & S. C., M. F., Coated and Enamel, Lithograph	All quotations withdrawn	
Tissues—f. o. b. Mill		
White, No. 1, Colored, Anti-Tarnish, Silver Tissue, Manila	All quotations withdrawn	
Kraft—f. o. b. Mill—		
No. 1 Domestic	7.00	@ 7.50
No. 2 Domestic	5.50	@ 6.25
Imported	6.00	@ 6.25
Screenings	3.00	@ 3.50
Manila—		
No. 1 Jute	8.50	@ 9.00
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.50	@ 5.50
No. 2 Wood	4.00	@ 4.50
Butchers	4.25	@ 4.75
Fiber Papers—		
No. 1 Fiber	6.00	@ 6.25
No. 2 Fiber	5.00	@ 5.25
Common Bogus	2.50	@ —
Card Middies	4.00	@ 5.00
Boards—per ton—		
News	65.00	@ —
Straw	—	@ —
Chip	60.00	@ —
Binders' Board	75.00	@ —
Sgl. Mla. Ll.Chip.	70.00	@ —
Wood Pulp	—	@ —
Container	—	@ —
Wax Paper—		
Self Sealing White 28 and 30 lb. basis	10.50	@12.00
Waxed Tissue	1.60	@ 1.80
Glassine—		
Bleached, basis 25 lbs., Bleached, basis 20 lbs.	All quotations withdrawn	

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	32.00	@36.00
No. 1 Domestic	28.00	@32.00

(F. o. b. Pulp Mills.)

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—		
Bleached	4.30	@ 4.50
Easy Bleaching	2.85	@ 3.10
No. 1 strong unbleached	2.50	@ 2.75
No. 2 Strong unbleached	2.25	@ 2.50
No. 1 Kraft	2.70	@ 3.00
Sulphate—		
Bleached	3.90	@ 4.00

(F. o. b. Pulp Mill.)

Sulphite (Domestic)—		
Bleached	4.25	@ 4.50
Strong unbl'chd.	2.60	@ 2.80
Easy Bleaching Sulphite	2.70	@ 3.10
News Sulphite	2.50	@ 2.80
Mitscherlich	2.75	@ 3.05
Kraft (Domestic)	2.65	@ 3.00
Soda Bleached	4.00	@ 4.50

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	11.25	@11.75
New White, No. 2	6.50	@ 7.00
Silesias. No. 1	6.25	@ 6.75
New Unbleached	9.00	@ 9.50
Washables	4.00	@ 4.25
Fancy	5.00	@ 5.50
Cotton—according to Grades—		
Blue Overall	5.50	@ 6.00
New Blue	4.75	@ 5.00
New Black Soft	5.50	@ 6.00
New Light Seconds	2.75	@ 3.00
O. D. Khaki Cuttings	3.75	@ 4.25
Men's Corduroy	2.75	@ 3.00
New Canvas	7.00	@ 7.25
New Black Mixed	2.50	@ 2.75

Old

White, No. 1—		
Repacked	6.50	@ 6.75
Miscellaneous	5.50	@ 6.00
White, No. 2—		
Repacked	3.25	@ 3.50
Miscellaneous	2.75	@ 3.00
St. Soiled White	1.65	@ 1.75
Thirds and Blues—		
Repacked	1.75	@ 1.85
Miscellaneous	1.45	@ 1.55
Black stockings	2.90	@ 3.25
Roofing Rags—		
Cloth Strippings	1.25	@ 1.35
No. 1	1.25	@ 1.35
No. 2	1.20	@ 1.25
No. 3	.85	@ .95
No. 4	.85	@ .95
No. 5A	1.00	@ 1.10

Foreign Rags

New Light Silesias	6.00	nominal
Light Flannelettes	6.75	nominal
Unbl'chd Cottons	7.50	nominal
New White Cuttings	9.50	nominal
New Light Oxfords	6.00	nominal
New Light Prints	4.50	nominal
New Mixed Cuttings	2.00	@ 2.50
New Dark Cuttings	1.90	@ 2.10
No. 1 White Linens	9.00	@11.00
No. 2 White Linens	6.50	nominal
No. 3 White Linens	5.00	nominal
No. 4 White Linens	3.50	nominal
Old Extra Light Prints	2.00	nominal
Ord. Light Prints	1.75	nominal
Med. Light Prints	1.50	nominal
Dutch Blue Cottons	1.85	nominal
German Blue Cottons	1.50	nominal
Ger. Blue Linens	3.50	nominal
Checks and Blues	1.50	nominal
Dark Cottons	1.20	@ 1.30
Shoppery	1.00	@ 1.05
French Blues	1.75	@ 2.00

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	1.00	@ 1.10
Domestic	1.00	@ 1.10
Wool, Tares, light	1.45	@ 1.55
Bright Bagging	1.10	@ 1.25
No. 1 Scrap	1.00	@ 1.15
Sound Bagging	.85	@ .95
Manila Rope—		
Foreign	6.00	@ 6.25
Domestic	6.25	@ 6.50
New Bu. Cut	2.25	@ 2.45
Hessian Jute Threads—		
Foreign	2.25	@ 2.50
Domestic	2.20	@ 2.40
Mixed Strings	.90	@ 1.00

Twines

Cotton—(F. o. b. Mill)		
No. 1	.35	@ .37
No. 2	.31	@ .33
No. 3	.37	@ .29
India, No. 6 basis—		
Light	.20	@ .21
Dark	.19	@ .20
B. C., 18 Basis	.41	@ .42
A. B. Italian, 18 Basis	.51	@ .61
Finished Jute—		
Light, 18 basis	.26	@ .27
Dark, 18 basis	.29	@ .30
Jute Wrapping, 3-6 Ply—		
No. 1	.23	@ .24
No. 2	.21	@ .22
Tube Rope—		
4-ply and larger	.15	@ .17
Fine Tube Yarn—		
5-ply and larger	.19	@ .21
4-ply	.20	@ .22
3-ply	.20	@ .22
Unfinished India—		
Basis	.16	@ .17
Paper Makers Twine Balls	.13	@ .15
Box Twine, 2-3 ply	.18	@ .19
Jute Rope	.21	@ .24
Amer. Hemp, 6	.33	@ .35
Sisal Hay Rope—		
No. 1 Basis	.15	@ .17
No. 2 Basis	.13	@ .15
Sisal Lath Yarn—		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	4.00	@ 4.25
Hard, White, No. 2	3.65	@ 3.90
Soft, White No. 1	3.60	@ 3.80
Flat Stock—		
Stitchless	2.15	@ 2.30
Over Issue Mag.	2.60	@ 2.70
Solid Flat Book	2.10	@ 2.25
Crumpled No. 1	1.70	@ 2.00
Solid Book Ledger	3.00	@ 3.25
Ledger Stock	2.25	@ 2.50
New B. B. Chips	.65	@ .70
Manilas—		
New Env. Cut	2.50	@ 2.75
New Cut No. 1	2.00	@ 2.10
Extra No. 1, Old	1.55	@ 1.65
Print	1.10	@ 1.20
Container Board	1.00	@ 1.10
Bogus Wrapper	1.05	@ 1.15
Old Krafts, machine compressed Bales	2.00	@ 2.15
News—		
No. 1 White News	1.80	@ 1.95
Strictly Overissue	1.20	@ 1.30
Strictly Folded	1.10	@ 1.15
No. 1 Mixed Paper	.90	@ .95
Common Paper	.60	@ .65

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Paper

F. o. b. Mill

All Rag Bond, No. 1 Rag Bond, No. 2 Rag Bond, Water Marked Sulphite, Sulphite Bond, Sulphite Ledger, Superfine Writing, No. 1 Fine Writing, No. 2 Fine Writing, No. 3 Fine Writing, No. 1 M. F. Book, No. 1 S. & S. C. Book, Coated Book, Coated Label	All quotations withdrawn	
News—Rolls, mill	3½ @	4½
News—Sheets, mill	3¾ @	4¾
No. 1 Manila	5½ @	6
No. 1 Fiber	5 @	5½
No. 2 Manila	4½ @	5
Butchers' Manila	4 @	—
No. 1 Kraft	7 @	7½
No. 2 Kraft	6 @	6½
Wood Tag Boards	4 @	—
Screenings	2½ @	—
Boards, per ton—Plain Chip, Solid News, Manila Lined Chip, Container Line—85 Test, 100 Test	All quotations withdrawn	

Old Papers

Shavings—		
No. 1 Hard White	4.50	@ 4.75
No. 1 Soft Shav.	3.75	@ 4.00
No. 1 Mixed	2.10	@ 2.20
No. 2 Mixed	1.75	@ 1.90
White Envel. Cuttings	4.50	@ 4.75
Ledgers and Writings	2.65	@ 2.75
Solid Books	2.55	@ 2.65
No. 1 Books, light	2.40	@ 2.50
Blanks	2.00	@ 2.25
Ex. No. 1 Manila	2.40	@ 2.60
Manila Envelope Cuttings	2.40	@ 2.60
No. 1 Manilas	1.75	@ 2.00
Folders News (over issue)	1.40	@ 1.50
Old Newspaper	1.35	@ 1.45
Mixed Papers	1.25	@ 1.50
Straw Clippings	1.25	@ 1.50
Binders Clippings	1.25	@ 1.50
Kraft	2.40	@ 2.60
New Kraft Cuts	2.50	@ 2.75
Roofing Stock, f. o. b. Chicago, Net Cash—		
No. 1	33.00	@ —
No. 2	31.00	@ —
No. 3	29.00	@ —
No. 4	29.00	@ —

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.10	@ .60
Ledgers	.15	@ .40
Writings—		
Superfine	.15	@ .20
Extra fine	.12	@ .22
Fine	.20	@ .30
Fine, No. 2	.20	@ .25
Fine, No. 3	.15	@ .20
Book, M. F.	.06	@ .09
Book, S. S. & C.	.08	@ .15
Book, Coated	.08	@ .15
Coated Lithograph	.10	@ .15
Label	.08	@ .15
News	.05	@ .07
No. 1 Jute Manila	.12	@ .13
Manila Sul., No. 1	.08	@ .08½
Manila No. 2	.07½	@ .08
No. 2 Kraft	—	@ .08½
No. 1 Kraft	—	@ .09½
Common Bogus	.02½	@ .03
Straw Board	67.50	@70.00
News Board	58.00	@
Chip Board	58.00	@
Wood Pulp Board (Carload Lots)	1.20	@ 1.25
Binder Boards—		
Per ton	80.00	@
Carload lots	80.00	@
Tarred Felts—		
Regular	48.00	@50.00
Slaters	54.00	@56.00
Best Tarred, 1-ply (per roll)	1.35	@ 1.50
Best Tarred, 2-ply (per roll)	1.00	@ 1.15
Best Tarred, 3-ply	1.50	@ 1.65

Bagging

F. o. b. Phila.

Gunny No. 1—		
Foreign	1.10	@
Domestic	1.10	@
Manila Rope	5.25	@ 5.75
Sisal Rope	.75	@ .80
Mixed Rope	.75	@ .80
Scrap Burlaps	1.00	@ 1.25
Wool Tares, heavy	2.50	@ 2.75
Mixed Strings	.75	@ .80
No. 1, New Lt. Burlap	1.75	@ 2.00
New Burlap Cuttings	1.75	@ 2.10

Old Papers

F. o. b. Phila.

Shavings—		
No. 1, Hard White	4.00	@ 4.25
No. 2, Hard White	3.50	@ 3.75
No. 1 Soft White	3.60	@ 3.75
No. 2 Soft White	2.00	@ 2.25
No. 1 Mixed	1.50	@ 1.75
No. 2 Mixed	1.00	@ 1.25

(*Continued on page 70*)

XUM

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

SUMMARY

News print.....416 rolls, 321 bls.
Printing paper.....437 bls., 55 rolls
Photo paper.....18 cs.
Surface coated paper.....178 cs.
Writing paper.....17 cs.
Wall paper.....4 cs., 5 bls.
Wrapping paper.....28 rolls, 19 cs., 214 bls.
Cigarette paper.....275 cs.
Miscellaneous paper....6,039 rolls, 117 cs., 718 bls.

CIGARETTE PAPER

P. J. Schweitzer, Fenchurch, Marseilles, 75 cs.
P. J. Schweitzer, Roma, Marseilles, 80 cs.
Rose & Frank, Olympic, Southampton, 50 cs.
British-American Tobacco Co., Scythia, Liverpool, 9 cs.
British-American Tobacco Co., Port Hacking, Liverpool, 26 cs.
British-American Tobacco Co., Baltic, Liverpool, 18 cs.
The Surbrug Co., La Bourdonnais, Havre, 17 cs.

WRAPPING PAPER

Wilkinson Bros. & Co., Inc., Pipestone County, Rotterdam, 28 rolls.
C. Steiner, President Fillmore, Bremen, 19 cs.
Wilkinson Bros. & Co., Inc., Trondhjemsfjord, Bergen, 214 bls.

WALL PAPER

W. H. S. Lloyd & Co., Vennonia, London, 5 bls.
A. L. Diament, Lapland, Antwerp, 1 cs.
A. Murphy & Co., by same, 3 cs.

WRITING PAPER

E. Dietzgen & Co., Fenchurch, Marseilles, 8 cs.
E. Dietzgen & Co., Roma, Marseilles, 19 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Lapland, Antwerp, 138 cs.
Defender Photo Supply Co., by same, 40 cs.

PHOTO PAPER

Gevaert Co. of America, Lapland, Antwerp, 18 cs.

NEWS PRINT

Hudson Trading Co., Minnekahda, Hamburg, 105 rolls.
Vernon Bros. & Co., Port Hacking, Liverpool, 17 bls.
Virginia Paper Co., Inc., Natirar, Helsingfors, 304 bls.
Box Board Lining Co., by same, 119 rolls.
New York Tribune, by same, 192 rolls.

PRINTING PAPER

Paper House of Pennsylvania. Natirar, Helsingfors.
H. Reene Angel Co., by same, 55 rolls.
Hano Weinkrantz Co., Inc., by same, 37 bls.
J. B. Harris Co., Inc., by same, 23 bls
Paul E. Vernon & Co., by same, 114 bls.
Irving National Bank, by same, 157 bls.

PAPER

Republic Bag & Paper Co., Dryden, Hamburg, 1,108 rolls.
Hensel, Bruckman & Larbacher, Mt. Clay, Hamburg, 8 cs.
W. F. Ethrington & Son, Algeria, Glasgow, 67 cs.
H. Reene Angel & Co., Inc., Olympic, Southampton, 7 cs.
Parsons & Whittemore, Seydlitz, Bremen, 148 bls.
Parsons & Whittemore, by same, 1,986 rolls.
Republic Bag & Paper Co., by same, 193 rolls.
National Bank of Commerce, by same, 346 rolls.
Virginia Paper Co., Inc., by same, 170 bls.
Bulkley, Dunton & Co., by same, 21 bls.
Bulkley, Dunton & Co., by same, 32 rolls.
M. O'Meara Co., by same, 135 lbs.
Chemical National Bank, by same, 88 rolls.
New York Tribune, by same, 138 rolls.
Rose & Frank, France, Havre, 25 cs.
M. G. Lange Co., President Fillmore, Bremen, 10 cs.
H. Reeve Angel & Co., Inc., by same, 7 bls.
H. Reeve Angel & Co., by same, 217 rolls.
C H. Young Publishing Co, by same, 341 rolls.
Bulkley, Dunton & Co., by same, 72 rolls.
J. B. Harris & Co., Inc., by same, 148 rolls.
E C. Melby, Natirar, Gothenburg, 54 bls
Becker Paper Corp., by same, 165 bls.
Wilkinson Bros. & Co., Inc., by same, 8 bls.
Wilkinson Bros. & Co., by same, 465 rolls.
Republic Bag & Paper Co., by same, 907 rolls.

RAGS, BAGGINGS, ETC.

Katzenstein & Keene, Inc., Dryden, Hamburg, 260 bls. rags.
American Exchange National Bank, by same, 257 bls. rags.
Chase National Bank, by same, 12 bls. rags.
Chase National Bank, Mt. Clay, Hamburg, 216 bls. rags.
Katzenstein & Keene, Inc., Algeria, Glasgow, 186 bls. rags.
American Wood Pulp Corp., Pipestone Co., Rotterdam, 152 bls. rags.
Seaboard National Bank, Fenchurch, Marseilles, 44 bls. paper stock.
Brown Bros. & Co., Alpine Range, Middlesbrough, 529 bls. rags.
Ladenburg, Thalman & Co., West Inskip, Antwerp, 50 bls. rags.
American Wood Pulp Corp., by same, 595 bls. rags.
E. Butterworth & Co, by same, 101 bls. bagging.
J. B. Moors & Co., Scythia, Liverpool, 55 bags hide cuttings
Equitable Trust Co., Port Hacking, Liverpool, 72 bls. waste paper.
Royal Manufacturing Co., by same, 17 bls. cotton waste.
Katzenstein & Keene, Vennonia, London, 55 bls. new cuttings.
Katzenstein & Keene, Stamnore, Dundee, 149 bls. rags.
Katzenstein & Keene, Vennonia, London, 136 bls. rags.
Castle, Gottheil & Overton, Roussillon, Rouen, 37 bls. bagging.

OLD ROPE

Brown Bros. & Co., Pipestone Co., Rotterdam, 52 coils.
W. Schall & Co., Fenchurch, Barcelona, 53 coils
Brown Bros. & Co., Rotterdam, Rotterdam, 140 coils.
E. J. Keller Co., Inc., Pioneer, Havre, 67 bls. rags.
E. J Keller Co, Inc, Dryden, Hamburg, 194 bls. rags.
E. J. Keller Co., Inc., Lapland, Antwerp, 221 bls. flax waste.
E. J. Keller Co., Inc., La Bourdonnais, Marseilles, 354 bls. rags.
E. J. Keller Co., Inc., Breiz Izel, Havre, 170 bls. rags.
Salomon Bros. & Co., Kroonland, Antwerp, 162 bls., flax waste.
Salomon Bros. & Co., Storm King, Hamburg, 138 bls. rags.
Salomon Bros. & Co., Laconia, Leith, 48 bls. rags.

WOOD PULP

M. Gottesman & Co., Inc., Stavangerfjord, Christiania, 500 bls.
Hudson Trading Co., Winnebago, Gothenburg, 1,200 bls.
Brown Bros. & Co., Dryden, Hamburg, 495 bls., 75 tons.
M. Gottesman & Co., Inc., by same, 687 bls., 103 tons.
American Wood Pulp Corp., Alstern, Gothenburg, 250 bls.
Brown Bros. & Co., by same, 4,000 bls.
A. J. Pagel & Co., Inc., by same, 4,200 bls.
Tidewater Paper Mills Co., O. C. Curtis, Gaspe, 7,518 bls., 1,503 tons.
Tidewater Paper Mills Co., by same, 5,054 bls., 1,010 tons.
Bulkley, Dunton & Co., Malmen, Gefle, 1,500 bls., 304 tons.
A. J. Pagel & Co., Inc, Malmen, Domsjo, 4,890 bales, 815 tons
A. J. Pagel & Co., Inc, Malmen, Husum, 3,000 bales, 500 tons.
A. J. Pagel & Co., Inc., Malmen, Hornefors, 3,120 bales, 520 tons.
J. Andersen & Co., Natirar, Gothenburg, 250 bales, 50 tons.
Johansson, Wales & Sparre, Nitirar, Harnosands, 7,200 bales, 1,219 tons.
Guaranty Trust Co., Natirar, Sikea, 1,200 bales, 203 tons.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

Bulkley, Dunton & Co., Malmen, Gefle, 5,250 bls., 1,066 tons wood pulp.
A. J. Pagel & Co., Inc., Malmen, Domsjo, 3,300 bls., 550 tons wood pulp.
A. J Pagel & Co, Inc., Malmen, Husum, 1,500 bls., 250 tons wood pulp.
A. J. Pagel & Co., Inc., Malmen, Obbaola, 2,800 bls., 406 tons wood pulp.
A. J. Pagel & Co., Inc., Malmen, Hornefors, 1,440 bls., 240 tons wood pulp.
Scandinavian-American Trade Co., Natirar, Gothenburg, 2,362 bls., 354 tons wood pulp.
Johansson, Wales & Sparre, by same, 4,485 bls., 905 tons wood pulp.
Hudson Trading Co., Winnebago, Gothenburg, 3,000 bls. wood pulp.
R. F. Hammond, Naruega, Gothenburg, 2,500 bls., 500 tons wood pulp.
M. Gottesman & Co., Inc., Nevadan, Stockholm, 33 reels news print.
Salomon Bros. & Co., Blydendyk, Rotterdam, 148 coils old rope.
Katzenstein & Keene, Inc., Quaker City, London, 129 bales rags.
E. J. Keller Co., Inc., Glenridge, Frankfurt, 414 bales rags.
E. J. Keller Co., Inc., L. P. Homblar, Copenhagen, 739 bales rags
Castle, Gottheil & Overton, Burgerdyk, Rotterdam, 368 bales rage.
Castle, Gottheil & Overton, Glenridge, Antwerp, 89 bales rags.
Castle, Gottheil & Overton, Breiz Izel, Rouen, 839 bales rags.

PORTLAND (MAINE) IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

Scandinavian-American Trading Co., Natirar, Harnosands, 8,400 bls., 1,422 tons wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

Castle, Gottheil & Overton, Kentucky, Havre, 432 bls. rags.
Katzenstein & Keene, Inc., City of Weatherford, London, 131 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

Hudson Trading Co., Steigerwald, Hamburg, 179 rolls news print.
Salomon Bros. & Co., Morristown, Hamburg, 210 bls. rags.
Salomon Bros. & Co., Western Scout, Hamburg, 62 bls. rags
Salomon Bros. & Co., City of Flint, Hamburg, 633 bls. rags.
Salomon Bros. & Co., Hudson, Antwerp, 104 bls. rags.
Salomon Bros. & Co., Sahale, Leith, 370 bls. rags.
Salomon Bros. & Co., Chickasaw, Hamburg, 432 bls. rags.
Katzenstein & Keene, Inc., West Inskip, Antwerp, 36 bls. rags.
Katzenstein & Keene, Inc., Breiz Izel, Havre, 327 bls. rags.
E. J. Keller Co., Inc., Silene, Marseilles, 830 bls. rags.
E. J Keller Co, Inc, L. P. Holmblar, Copenhagen, 455 bls. rags.
E. J. Keller Co., Inc., Breiz Izel, Rouen, 525 bls. rags
E. J. Keller Co, Inc, Breiz Izel, Havre, 275 bls. rags.
E. J. Keller Co., Inc, Edgehill, Frankfurt, 184 bls. rags.
E. J. Keller Co, Inc, Burgersdyk, Rotterdam, 79 bls rags.
E. J. Keller Co., Inc., West Inskip, Antwerp, 359 bls rags.
Castle, Gottheil & Overton, Burgesdyk, Amsterdam, 262 bls. rags.
Castle, Gottheil & Overton, Michigan, Antwerp, 658 bls. rags.
Castle, Gottheil & Overton, Breiz Izel, Rouen, 1,492 bls. rags.
Castle, Gottheil & Overton, by same, 265 bls. bagging.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

Salomon Bros. & Co., Chappaqua, Antwerp, 466 bls. flax waste.
Kalbfleisch Corp., Songdal, Buenos Aires, 334 bagss casein.

XUM

The BC INC

Quality: *It means more than price*

PULPS

"Hafslund Bear" **"Forshaga"**

BLEACHED SULPHITE

"Klarafors"

EASY BLEACHING SULPHITE

STRONG UNBLEACHED SULPHITE

"Hurum" **"Bamble"**

EXTRA STRONG KRAFT; BLEACHED AND BLEACHABLE SULPHATE

"Edsvalla" 50% MOIST **"Dejefors"** DRY

WHITE SPRUCE—GROUND WOOD

Tonnage available on dock for prompt shipment

THE BORREGAARD CO., INC.
200 FIFTH AVENUE NEW YORK CITY

Clay

300 Tons daily

Some portion of our clay production is ***pulverized.*** That part of it which is ***pulverized*** is, as far as we know, the only ***pulverized clay*** which is washed and refined before being pulverized.

This insures greater freedom from impurities and an exceedingly uniform product.

Prices on M-E pulverized clay may surprise you even considering this additional treatment.

Let us submit samples and quote you

AMERICAN MADE FOR AMERICAN TRADE

THE MINER-EDGAR CO.

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TAYLOR, BATES & CO.

Members New York Stock Exchange
Members New York Cotton Exchange

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BONDS	**Bought and Sold**
STOCKS	**on**
COTTON	**Commission**

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Seamless felts for fast running.
Satin Style felts for finish.
Special felts to meet every condition.
Send us your felt probems.

KNOX WOOLEN COMPANY
CAMDEN, MAINE

SOLD BY
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75-77 Duane St., N. Y., and direct

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, SEPTEMBER 27, 1922.

ALUM.—The demand for ammonia alum continues on the increase with the advent of brisk fall business. Price quotations are steady to firm, the current listings being $3.50 to $3.75 a hundred for powdered alum and $3.40 to $3.60 for ground.

BLEACHING POWDER.—Large drum quantities of bleach are becoming more and more scarce each week, but the price is holding in the neighborhood of $1.70 per cwt. with a tendency toward stiffening. Producers are still encountering serious fuel difficulties.

BLANC FIXE.—Registering a fair amount of activity, supplies of blanc fixe are steadily moving to consumers at the quoted prices of $70 to $80 per ton on dry blanc fixe and $40 to $50 on the blanc fixe pulp.

CAUSTIC SODA.—Shipping from caustic plants is in sporadic and uncertain quantities due to the difficulties which producers have had to surmount in the matters of securing adequate coal supplies and transportation facilities. Caustic soda is now quoted around 2.70 cents a pound, works, for the 60 per cent basis grade.

CHINA CLAY.—New York importers assert that the china clay market is now stronger than it has been in several years. Dealers are catering to an excellent demand and large imports of the English product have either already arrived in this country or are on the way here. It is believed that the present heavy requirement of consumers will lead to prices higher than the quoted $15 to $22 per ton on imported clay, $8 to $11 on domestic washed and $6 to $8.50 on domestic unwashed.

CASEIN.—With the falling off of domestic production of casein, combined with the announcement of the lowered import duty, it is anticipated that the next six weeks will witness a considerable relaxation in the price tension of the casein market. Argentine casein is now being sold for 1923 delivery at prices ranging from four to six cents a pound lower than the rates which were prevailing a month ago. The price of 15 to 19 cents a pound now obtains.

LIQUID CHLORINE.—The demand for liquid chlorine, both in 100-lb. cylinders and in tank cars is improving considerably. Reserve supplies of the chemical are going into consumption and the quoted price of 4.00 to 7.00 cents a pound exhibits a tendency to harden.

ROSIN.—Rosin is still quoted at $6.25 per barrel for grades E, F and G, f.o.b. New York, the demand being consistently regular.

SALTCAKE.—Dealers state that it is almost impossible to obtain any given quantity of saltcake under present conditions. All consumers are entering the market at once causing a sharp incline in the price tone. Saltcake is quoted at an average of $22 per ton, works, while acid cake has remained up around the $25 and $26 mark.

SATIN WHITE.—As with blanc fixe, supplies of this whitening agent are registering increased activity, giving the market price of 1.50 to 2.00 cents a pound a steady-to-firm aspect.

SODA ASH.—The soda ash demand has increased in proportion to that for other chemicals with the coming of fall business. The commodity is listed at 1.51 cents a pound, the schedule price, with bag lots being quoted at 1.30 cents and bulk at 1.20.

SULPHUR.—Texas and Louisiana sulphur shipments are picking up slightly in response to the increased demands of paper manufacturers. Brimstone prices are very firm at $18 to $20 per ton.

STARCH.—The larger starch producers predict that prices on all grades of starch will slack up somewhat due to the 1922 bumper corn crop. Powdered starch is quoted at approximately 2.47 cents a pound in bag lots and 2.75 in barrels while papermakers' starch is listed at 2.57 and 2.85 for these amounts.

Market Quotations

(Continued from page 67)

Solid Ledger Stock.	2.25	@	2.50
Writing Paper.....	2.00	@	2.25
No. 1 Books, heavy.	2.25	@	2.50
No. 2 Books, light.	1.40	@	1.50
No 1 New Manila.	2.75	@	3.00
No 1 Old Manila..	1.50	@	1.75
Container Manila,..	1.35	@	1.40
Old Kraft.....	2.25	@	2.50
Overissue News....	150	@	1.60
Old Newspaper....	1.20	@	1.25
No. 1 Mixed Paper.	1.10	@	1.15
Common Paper....	.80	@	.90
Straw Board, Chip.	.80	@	.90
Binders Bd'. Chip..	.80	@	.90

Domestic Rags—New.
Price to Mill, f. o. b. Phlia.

Shirt Cuttings—			
New White, No. 1.	11¼	@	.11¾
New White, No. 2	.06	@	
Silicias, No 1....	.06½	@	.07
New unbleached..	.10¼	@	
Washables	.03¾	@	
Fancy	04¾	@	.05¾
Cottons—according to grades—			
Blue Overall....	.05½	@	.05¾
New Blue.....	.02¼	@	.02¾
New Black Soft.	.06¼	@	.06½
New Light Seconds	.02⅜	@	.02¾
Khaki Cuttings..	.03½	@	.04¼
Corduroy	.03⅛	@	.03⅜
New Canvass....	.07½	@	.08
New Black Mixed	.04	@	
Old			
White, No. 1—			
Repacked	.06	@	.06½
Miscellaneous ...	.04½	@	.04¾
White, No. 2—			
Repacked	.03	@	.03½
Miscellaneous ...	.03	@	.03¼
Thirds and Blues—			
Repackeed	200	@	2.25
Miscellaneous ...	1.85	@	1.90
Black Stockings....	2.75	@	3.00
Roofing Stock—			
No. 1.....	1.30	@	1.35
No 2.....	1.20	@	1.25
No 3.....	1.10	@	1.15
No. 4.....	110	@	1.15
No. 5A.....	1.05	@	110
B.....			nominal
C.....			nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.08½	@	.65
Ledgers	.08½	@	.55
Writings	09	@	.42
Superfine	.15	@	.22½
Fine	.15	@	.18
Books, S. & S. C..	.08	@	.12
Books, M. F.....	.06½	@	.10
Books, coated.....	.08	@	.16
Label	.09½	@	.13
News, sheets.....	4.50	@	4.75
News, rolls.....	4.00	@	4.25
Manilas—			
No. 1 Manila...$5.50		@	7.00
No. 1 Fiber.....	.07½	@	
No. 1 Jute.....10.50		@	12.00
Kraft Wrapping....	.06½	@	.12
Common Bogus....	3.00	@	3.50

Boards

(Per Ton Destination)

Chip $50.00		@	55.00.
News, Vat Lined..51.50		@	55.00
Wood, Vat Lined..60.00		@	65.00
Filled News Board.52.50		@	55.00
Solid News Board..60.00		@	65.00
S. Manilla Chip....62.50		@	67.50
Pat. Coated.....70.00		@	85.00

Old Papers

Shavings—			
No. 1 Hard White	4.00	@	4.25
No. 1 Soft White	3.30	@	3.45
No. 1 Mixed....	1.50	@	1.75
Ledgers & Writings	1.75	@	2.00
Solid Books.....	2.00	@	2.25
Blanks	1.70	@	1.80
No. 2 Light Books.	1.50	@	1.80
Folded News, overissues 19.00		@	20.00
Gunny Bagging ...	.85	@	.90
Manila Rope.....	5.75	@	6.00
Common Paper....	.80	@	.90
Old News.....	.80	@	.90
Old Kraft.....	1.75	@	2.00

TORONTO

[FROM OUR REGULAR CORRESPONDENT]

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted.....	.12	@	.13½
Dark tinted.....	.13½	@	.15
Ledgers (sulphite).	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads)..	3.50	@	
Sheets (carloads).	—	@	4.25
Sheets (2 tons or over)	—	@	4.50
Book—			
No. 1 M. F. (carloads)	8.50	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	9.00	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 1 Coated and litho. 14.00		@	—
No. 2 Coated and litho. 13.00		@	—
No. 3 Coated and litho. 12.25		@	—
Coated and litho., colored 14.25		@	—
Wrapping—			
Grey	4.50	@	—
White Wrap	5.00	@	—
"B" Manila	5.50	@	—
No. 1 Manila ..	6.75	@	—
Fiber	6.75	@	—
Kraft, M. F.	8.00	@	—
M. G.	8.15	@	—

Pulp

(F. o. b. Mill)

Ground wood.....$28.00		@	35.00
Sulphite easy bleaching 60.00		@	67.50
Sulphite news grade.50.00		@	55.00
Sulphite, bleached..85.00		@	95.00
Sulphate 70.00		@	—

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut..	3.75	@	—
Soft White Book Shavings	3.75	@	—
White Bl'k News	2.00	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	2.25	@	—
Light and Crumpled Book Stock.	2.10	@	—
Ledgers and Writings	2.50	@	—
Solid Ledgers...	1.95	@	—
Manilas—			
New Manila Cut.	2.00	@	—
Printed Manilas..	1.55	@	—
Kraft	2.50	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News....	.80	@	—
No. 1 Mixed Papers	.70	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto.			Per lb.
No. 1 White shirt cuttings	.11¼	@	.11½
No. 2 White shirt cuttings	.06½	@	—
Fancy shirt cuttings	.06	@	.06¼
No. 1 Old whites	.04	@	—
Thirds and blues	.02	@	.02½
			Per cwt.
Black stockings..	2.50	@	—
Roofing stock:			
No. 1.....	1.50	@	—
No. 2.....	1.40	@	—
Roofing stock:			
Manila rope.....	.06	@	.06¼
No. 2.....	.01½	@	—
Gunny bagging....	1.00	@	1.25

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132ND TO 133RD ST. & BROOK AVE

PAPER BAGS

Sacks and Specialties

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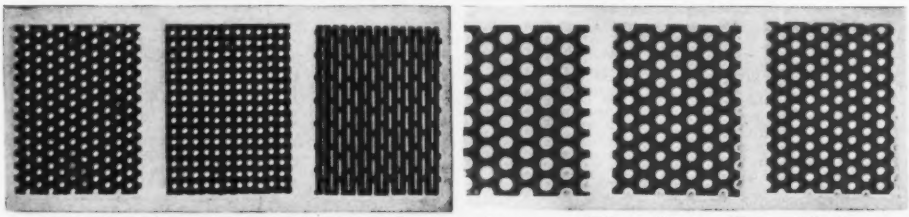
This Registered Trade Mark Octagon

on a Paper Bag Vouches for Its Good Quality

PERFORATED METALS

All sizes and shapes of Holes



All kinds and thicknesses of Metal

For Centrifugal and Rotary Screens, Drainer Bottoms, Filter Plates, Pulp Washers, etc.

The Harrington & King Perforating Company 1

618 No. Union Ave., Chicago, Ill., U. S. A. New York Office, 114 Liberty St.

Felt Test—Lowest Cost per Ton

If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts, for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

English China Clays ECCO CLAYS Sales Corporation

33 WEST 42ND ST., NEW YORK

Ecco Clays 500,000 Tons Annually

DELIVERIES FROM PRODUCER INSURE AND ENABLE YOU TO PRODUCE UNIFORM PAPER

Highest Grades Filler and Coating Clays

WANT AND FOR SALE ADVERTISEMENTS

CLASSIFIED RATES

Minimum rate for advertisements of 25 words or less, first insertion, $1.00.

SITUATION WANTED, 4 cents a word for first insertion and 2 cents a word for each subsequent insertion of same ad. No ad of less than 25 words accepted.

HELP AND MISCELLANEOUS WANTS, and small For Sale Ads, 4 cents a word for each and every insertion. No ads of less than 25 words accepted.

When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

WANTED — Board Machine Tender, eighty cents per hour and steady work year round. Only first class man wanted. Address, Box 5422, care Paper Trade Journal. S-28

WANTED — Experienced Printing Paper Salesman for New England territory. Must be capable of earning good salary. State your full experience in first letter. Address, Box 5423, care Paper Trade Journal. O-12

WANTED—Two Calender Men. Wages 55 cents per hour. Eight hour day. None but expert workmen need apply. Address, Box 5424, care Paper Trade Journal. S-28

WANTED—A Competent Millwright to take care of all repairs in connection with a two Machine, Chip Board Mill with production of 60 tons 24 hours. Address, Box 5425, care Paper Trade Journal. O-5

WANTED—Boss Machine Tender. Must be capable, thoroughly experienced, give results and willing to prove himself on two Cylinder Machines making Bristol Boards. Good opportunity with chance of advancement. State experience, send copies of references in first reply. Address, Box 5426, care Paper Trade Journal. O-26

WANTED — Two Good Paper Mill Millwrights. Must be familiar with wood room. Good town to live. Cheap rents. Good working conditions. Open shop. Steady men wanted. Address, Box 5427, care Paper Trade Journal. S-28

PAPER SALESMAN WANTED—One who desires to sell on commission for House carrying general line of Papers and card board. Address, Box 5428, care Paper Trade Journal. S-28

SALESMAN WANTED—Can use services of experienced Wrapping, Board. Twine and Specialty Salesman on commission or salary basis for New York City, New Jersey and Connecticut. Communication confidential. Give complete details. Address, Box 5429, care Paper Trade Journal. S-28

WANTED—Superintendent for two Machine Mill making Nine Point Straw for Corrugating. One familiar with water wheels and steam engines preferred. State age, experience on straw and salary required in first letter. Address, The Thompson & Norris Co., Brookfield, Indiana. S-28

WANTED—Experienced Salesman on Toilet Paper and Paper Towels for New England Territory on commission basis. Address, Box 5437, care Paper Trade Journal. S-28

WANTED—Machine tender, back tender and beater engineer. Experienced in making Patent Coated, Manilla Lined, Chip and Container Board. No labor troubles. Mill in small town near large city, New York State. State experience and wages wanted. Address, Box 5460, care Paper Trade Journal. S-28

HELP WANTED

MACHINE TENDER for Fourdrinier, also one for Cylinder Tissue Machine, for Pacific Coast. Give full particulars about yourself. Address, Box 5440, care Paper Trade Journal. O-12

WANTED—Machine tender for 96" Machine making Book, Bond and Writings. None but first class man need apply. Address, Box 5441, care Paper Trade Journal. O-12

WANTED—Two first class Cylinder Machine Tenders, also two Finishers for a mill near New York City; three shifts. Address, Box 5442, care Paper Trade Journal. S-28

WANTED—One Machine Tender, two Backtenders and one Third Hand for slow, small news machine. Address, Box 155, Lambertville, New Jersey. S-28

WANTED AT ONCE—Assistant Superintendent to take charge of one Machine Board Mill nights, making 25 tons Newsboard, Tag and Colored Stock. Steady work with future for man who can work hard and get results. State references, wages expected and how soon you could report, in first letter. Address, Box 5443, care Paper Trade Journal. O-12

PAPER SACKS — Experienced man as Superintendent in Plant manufacturing Sacks for Flour, Fuel, Cement, etc., including printing. State full particulars as to salary, experience, in first letter. Address, Box 5459, care Paper Trade Journal. S-28

AN EASTERN MANUFACTURER of Glazed and Plated surface coated box makers' papers wishes to employ experienced salesman familiar with the trade. References required. Address, Box 5390, care Paper Trade Journal. O-5

SITUATIONS WANTED

BOSS FINISHER residing in vicinity of New York City is open for engagement in Coating Mill making Book, Lithographic, Glazed, Embossed Fancy Papers and Coated Specialty. Address, Box 5431, care Paper Trade Journal. O-12

GENERAL SUPERINTENDENT or Manager with several years' experience in modern mills manufacturing News, Book, Hangings and Specialties, desires connections with good organizer and producer. New organization. Would consider foreign country. Address, Box 5432, care Paper Trade Journal. S-28

YOUNG MAN, 24, at present employed wishes to make change. Desirous of connecting with reliable concern, where there is possibility for good future. Have worked in capacity as salesman, office man and have had five years of mill experience. Address, Box 5367, care Paper Trade Journal. tf

MECHANICAL ENGINEER with several years' practical experience as superintendent of ground wood, sulphite and news print mills, would like to make change. Address, Box 5406, care Paper Trade Journal. S-28

PAPER AND PULP MAN: Open for engagement. Extensive experience. Practical knowledge purchasing, manufacturing and selling. Specialty increasing profits. Highest references. Address, Box 5407, care Paper Trade Journal. S-28

SUPERINTENDENT and technical man with nine years' experience in paper making and laboratory research desires opportunity to learn all phases of office administration in up-to-date paper mill. Nominal salary required. Address, Box 5408, care Paper Trade Journal. tf

MASTER MECHANIC with a large experience in construction, reconstruction and efficiency, desires to make change. Address, Box 5383, care Paper Trade Journal. tf

SITUATIONS WANTED

SUPERINTENDENT: Now employed desires to make change. Well up on all grades of Board. Can handle help and get production. Can handle own repairs and construction. Address, Box 5409, care Paper Trade Journal. O-12

SUPERINTENDENT of ability open for position. Expert on colors, familiar with all grades of board. Understands plant thoroughly. Is a good executive and can get results. Address, Box 5384, care Paper Trade Journal. S-28

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5114, care Paper Trade Journal S-28

SULPHITE SUPERINTENDENT, 20 years' practical and technical training, wishes to get in communication with Managers of Mills who want the best and are not getting it. Address, Box 5353, care Paper Trade Journal. O-5

MECHANICAL ENGINEER; 12 years' experience with thorough knowledge of power plant operation and engineering. Will submit record for investigation to executive requiring reduction in power costs and coal consumption. Address, Box 5400, care Paper Trade Journal. O-5

SALESMAN — Ten years' experience as paper Broker, Coated, Book and Fine. Wants to make new connections, for Philadelphia District. Address, Box 5444, care Paper Trade Journal. O-12

MILL CONNECTION WANTED by young man with several years' experience in manufacture and sale of Wood Pulp, Wrapping, Waxed Papers, and Paper Specialties. Will open office to represent mills and sell on commission basis in New England. Address, Box 5445, care Paper Trade Journal. O-12

POSITION WANTED—Young man with several years' experience with manufacturers and jobbers of paper would like position as manager of mill. Address, Box 5446, care Paper Trade Journal. O-12

ASSISTANT to General Manager or President as Plant Manager. Experienced on Ground Wood and News. Capable taking entire charge as Executive. Desirable connection wanted rather than immediate large salary. Address, Box 5447, care Paper Trade Journal. O-5

SALESMAN with University and Practical Education, 36 years old, wishes to affiliate with mill making bonds, writings and envelope stocks. To travel the middle west or Pacific Coast. Address, Box 5448, care Paper Trade Journal. O-12

PURCHASING AGENT open for engagement. Fifteen years paper mill experience, ten years with one of largest Paper Mills in the country. References furnished from present employer. Address, Box 5449, care Paper Trade Journal. O-12

SITUATION WANTED—A treasurer of one of the largest Paper Jobbing Houses in the country desires to make a new connection. Have formulated company's financial policies, in charge of its credits, collection, accounting, taxation matters of all kinds, etc. Am still holding and have held this position with this one concern for 15 years. Am 46 years of age and have been constantly engaged in the paper business for many years. Address, Box 5450, care Paper Trade Journal. S-28

WANTED—A position as tour foreman in mill making Manillas, Bond, Kraft, or Wrappers by middle aged married man with 25 years' experience. Will accept position as Machine Tender where there is a chance for advancement. At present employed. Address, Box 5451, care Paper Trade Journal. O-5

XUM

SITUATIONS WANTED

SALESMAN—Specialist on Coated Lithographic Papers and Boards; also Offset and Printing Papers, desires to connect with mill or dealers having mill connections. Can produce good business. Address, Box 5260, care Paper Trade Journal. S-28

PULP AND PAPER CHEMIST with thorough technical training and twelve years' practical experience with present employers, wishes to change to progressive company desiring to improve efficiency of manufacturing operations. Competent to organize and direct technical department for testing, control of mill operations, experimental and research work. Address, Box 5452, care Paper Trade Journal. O-19

WANTED: POSITION as Machine Tender on Straw, Corrugating and Chip. Can furnish best references from different concerns. Address, Box 5461, care Paper Trade Journal. O-5

YOUNG MAN, age 26, honest, reliable and discreet; having learned paper making under my father, who was a Mill Superintendent. Have worked in all departments of mill. Ran Fourdrinier, Cylinder and Yankee Machines, am running news machine now, but am ambitious and want to advance. Would make good assistant to President, Manager or Superintendent. Address, Box 5457, care Paper Trade Journal. O-5

YOUNG MAN, 32 years of age; technical education, 10 years' experience covering Physical and Chemical Testing of Pulps and Paper, Chemicals, etc.; Experimental and Development Work on Cotton Linters, Long Leaf Pine, Sugar Cane (Bagasse), etc. Have a thorough knowledge of Pulp and Paper Machinery and Operation of same. If you have a position open in your organization which requires technical and practical knowledge of Paper Making Processes let me confer with you personally regarding my experience, ability, etc. Best of references. Open October 1st. Address, Box 5458, care Paper Trade Journal. O-5

SUPERINTENDENT of ability, now employed, desires to make change. Twenty-five years' experience on all grades of board. Expert on colors. Can handle repairs and get production. Address, Box 5455, care Paper Trade Journal. O-5

FOR SALE

FOR SALE—One "Sheridan," new model, 36-inch Guillotine Automatic Paper Cutter, belt driven, with one extra knife and fifteen cutter knife sticks. Address, Box 5433, care Paper Trade Journal. O-12

FOR SALE—6 Farnum Drives. Complete Triple-Deck frames for 44 Dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

FOR SALE—1 standard Pneumatic Save-all design No. 6 equipped with a No. 1 blower. Brand new. Still in original crate. Address, Box 5453, care Paper Trade Journal. S-28

FOR SALE—Two Potdevin Glassine Bag Machines. Perfect condition. Price reasonable. Write for further information. The Peerless Mfg. Co., Norristown, Pa. S-28

MISCELLANEOUS

WANTED — One Nash Hytor Turbine Vacuum Pump, Number four or number six. Write Mill Department. Rose Lithographic Corporation, 55 33rd Street, Brooklyn, N. Y. O-5

CYLINDER MOULDS WANTED—Either 36 or 30 inches diameter and anywhere from 80 to 88 inches face. Price must be reasonable. Address, H. O. Ruby, York, Pa. S-28

ADVERTISER wishes to correspond with party owning small Paper Mill with Fourdrinier Machine about 76 inches wide, to manufacture specialty realizing large profits. Further particulars. Address, Box 5414, care Paper Trade Journal. S-28

MISCELLANEOUS

WANT TO PURCHASE—One Cutter for cutting Jumbo Rolls, 72 inches trim, into sheets. Address, Box 5454, care Paper Trade Journal. S-28

FOURDRINIER MACHINE WANTED — State size, condition, and price fully and where can see machine. Price must be f.o.b. cars. Address, Box 5455, care Paper Trade Journal. O-12

A well known and long established Firm in Sweden, with excellent Pulp Mill connections in Scandinavia, desires to be represented in United States. We desire a party who is well acquainted with users and buyers of high grade pulps. Address, Box 5439, care Paper Trade Journal. O-5

Do You Want Help?

Or have you some machinery you would like to dispose of?

Try the Want Pages

of the

Paper Trade Journal

MISCELLANEOUS

SHARTLE

can fill your requirements in used or new machinery.

THE SHARTLE BROTHERS MACHINE CO.

Middletown Ohio

TF.

OFF PEAK POWER

About 35,000,000 Kilowatt Hours per year available at Tonawanda, or North Tonawanda, New York.

Will make attractive rate to anyone who can utilize this power.

Location at the foot of navigation of the Great Lakes and the Western Terminus of the New York State Barge Canal.

Rail transportation facilities unsurpassed. Labor and Living Conditions Good.

Tonawanda Power Company

North Tonawanda, N. Y.

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Rebuilt Paper Mill Machinery

In Stock and Guaranteed

Not Where Is and As Is

FOURDRINIER TISSUE MACHINE—One 68"

FOURDRINIER PARTS—Pusey & Jones 118", 100". Kutter Trowbridge 96"

PRESS PARTS FOR PAPER MACHINES—Pusey & Jones bell crank housing with rolls 18" x 117". Black & Clawson swing arm housing.

DRYERS—Four 48" x 111", one 36" x 80", two 36" x 73", four 48" x 68", one 84" x 67", eleven 42" x 66", two 36" x 48", four 20" x 39".

CHILLED CALENDERS—One 86" six roll, one 82" five roll, one 66" five roll, one 54" five roll, two 58" five roll.

DILLON DOCTOR—For machine calender 60" to 144" face.

SLITTERS & WINDERS—One 120" Warren, one 108" Kidder, one 110" two drum Moore & White.

REELS—Pusey & Jones two drum, Rice, Barton & Fales two drum.

BEATERS—Four N. & W. 72" x 42", one Dilts 62" x 50" iron tub, one Jones 62" x 52", one Dillon 60" x 48", two Emerson 54" x 60", three Downingtown 54" x 42" iron tub, two Emerson 53" x 52", seven Horne 36" x 36", two No. 2 Claflins, two No. 1 Claflins. One 36" x 26" N. & W.

JORDANS—One Appleton Wagg Majestic, two No. 2 Dillon Improved, one Large Horne, two Monarch, one Jones Standard, one Pope brushing engine.

SCREENS—Two 12 plate, two 8 plate, open side Packer screens. Two 6 plate, one Moore & White auxiliary.

STUFF PUMPS—Deane triplex 9" x 8", Goulds triplex 8" x 10", Sandusky triplex 4" x 6", Moore & White duplex 8" x 12", One Beloit duplex 6" x 14". Two 6" Post.

REVOLVING SHEET CUTTERS—One 82" and 62" Clark, five 61" Hamblets, four 61" Finlays, one 50" Hamblet diagonal, one 42" Finlay.

REAM CUTTERS—One 48" Acme, one 45" Holyoke Seybold.

SUPER CALENDERS—One 52" Holyoke, one 45", one 42", one 36".

WET MACHINES—Four 72" Bagley & Sewall Hydraulic, one 48" Noble & Wood. One Manistee Hog Chipper. One Rythers & Pringle Shredder. We have a large number of pumps and over five hundred calender, press and couch rolls in stock.

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—An Opportunity—

The capital stock of a well-known and firmly established fine paper company, located in New York City, is offered for sale in whole or in part. The company owns or controls a number of popular brands of bond, ledger and writing papers.

An excellent opening for an out-of-town concern to enter the New York market, or for the purchase by an individual of an interest in a going business.

Address: Wm. C. Ridgway
41 Park Row New York City

Paper Salesmen Mill Agents Brokers

If you have an established trade and cannot do your customers or yourself full justice because of insufficient capital—lack of organization or weakness in your mill connections—get in touch with us. We will show you how to expand to your fullest capacity. Write us in strict confidence to Box 5456, care Paper Trade Journal.

0-12

FOR SALE

Paper Bag Manufacturing Plant

Acting under an order of the District Court of the United States for the Eastern District of Virginia, the undersigned will on

THURSDAY, OCTOBER 12th, 1922

Beginning at 10:30 O'clock, A. M.

offer for sale at public auction on the premises Nos. 1400-1408 West Marshall Street, Richmond, Virginia, the office furniture and fixtures, machinery, appliances, tools and supplies, formerly owned and used by the Eagle Paper Company in the conduct of the manufacture of paper bags on said premises.

The property offered for sale embraces office furniture and supplies and the following machinery: 4 Potdevin bag machines, 33 Phelps bag machines, 10 Remington square bag machines, all belt driven and fully equipped; 2 National Machine Company's 5 pitch screw machines; 2 Champion paper blower machines; 1 White washing machine; 1 Seybold cutting machine; 2 Re-winding machines; 10 bundling machines; 1 Cincinnati milling machine; 1 shaper machine; 1 drill press; 1 belt lacing machine; 1 Rotary printing press; 1 waste paper baling press; 1 stencil cutting machine; 3 freight trucks; 1 Ford truck; 173 square 4 roller trucks; cabinets for stencil plates, knives, labels, belts and tools; time recording clocks; steam, bundling, printers and lunch tables; portable scales; 1 set of blacksmith tools and large assortment of fine first-class tools.

A complete inventory of the property will be promptly forwarded by the undersigned on application therefor.

Responsible bidders may arrange satisfactory terms by communicating with the undersigned in advance of sale.

For a number of years the property now offered for sale was used on the said premises in the conduct of an extensive and profitable paper bag business. The buildings in which the property is located consist of two large concrete and brick four story buildings with 100,000 square feet of floor space. They were planned and constructed for a paper manufacturing plant and are equipped with boilers, engines, dynamo and a modern sprinkler system. A railroad siding, R. F. & P. Railroad, runs alongside of the buildings. All machinery and other equipment are believed to be in good condition and ready to be put into active operation. The owners of the lot and buildings are ready and willing to open negotiations with prospective purchasers for a lease thereon and communications to this end may be addressed to the undersigned.

The undersigned will give prospective purchasers an opportunity of seeing and examining said property before the day of sale.

ROBT. N. POLLARD, RECEIVER,
TIMES-DISPATCH BUILDING
RICHMOND, VIRGINIA.

MILLER & MILLER, *Attorneys for plaintiff,*
Richmond, Va. 0-5

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BLEACHED SULPHITE

Buchanan & Bolt Wire Company

ESTABLISHED 1878 AT HOLYOKE, MASS.

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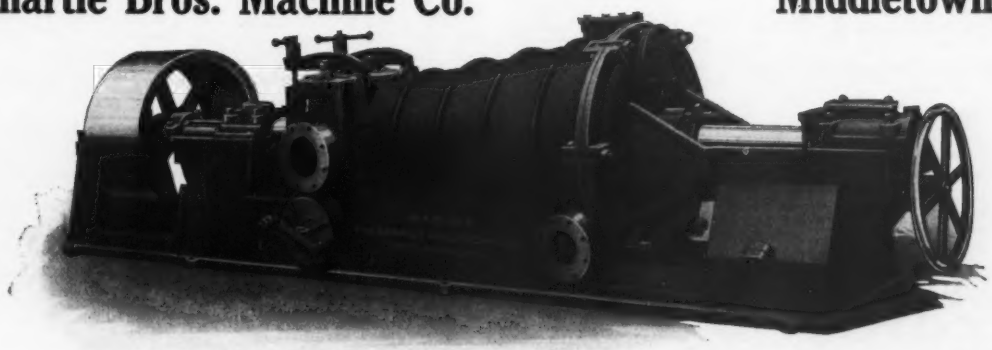
We make a Specialty of Fine Wires for Magazine and Book Papers

THE PAPER TRADE JOURNAL

Largest Circulation and Best Read of all mediums covering the Paper and Pulp Industry

The Shartle Bros. Machine Co. **Middletown, Ohio**



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HIGH SPEED SILENT RUNNING FLEXIBLE GEARING FOR POWER TRANSMISSION.
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TIMBER ESTIMATES
at a few cents an acre
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Designers, Equippers and Operators
Sulphite, Soda and Sulphate Pulp Mills
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Vapor Absorption Systems, Fuel Economizers, Air Conditioning Apparatus, Heating and Ventilating Systems
Sturtevant
PUTS AIR TO WORK
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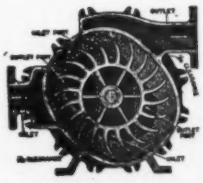

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THE NASH ENGINEERING CO.
SOUTH NORWALK, CONN.

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Microscopical Examination, Physical Tests and Chemical Analysis of Paper. Official Chemists to the American Paper and Pulp Association, Association of American Woodpulp Importers, etc.
We analyze Fuels, Chemicals, Dyestuffs, Intermediates, Gasoline, Oils, Paints, Soaps, Greases, Waxes, Water for Drinking or Boiler Purposes, Woodpulp, etc.

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ENTIRE PRODUCT FOR 1922 CONTRACTED
Mills at
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Two-Tower Acid Systems now in operation or building.
Normal Prices Today Govern Our Installations
Every second Sulphite Mill on this continent is using our Towers and Making Money by Making Better Acid.
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"Ask Your Neighbor What He Thinks of Them." 200 5th Ave. New York, N. Y.

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In the Manufacture of PAPER BOX BOARD, TEST BOARD, FIBRE BOARD AND STRAWBOARD
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Forty years' practical experience in all departments—Equipment, processes, formulae, trade customs, management, order and planning system. Markets, sales, estimating, prices, contracts, materials, supplies, collections, arbitrations, receivership and valuations.
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High Grade Fourdrinier Tissues in Stock for Immediate Delivery

Paper Stock
NOW IS THE TIME TO BUY OUR RAW MATERIALS
Out of our forty different grades of paper stock you are assured a steady, reliable source for procuring raw materials in practically every branch of paper making.
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Bagpaper Manufacturing Corporation

RED CAP FIBRE

AND OTHER

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Sales Office: 527 Fifth Ave., New York

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Keystone Mill Division

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MANILA, WHITE AND KRAFT

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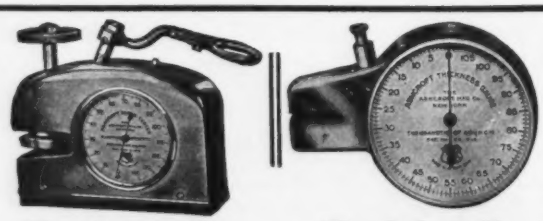

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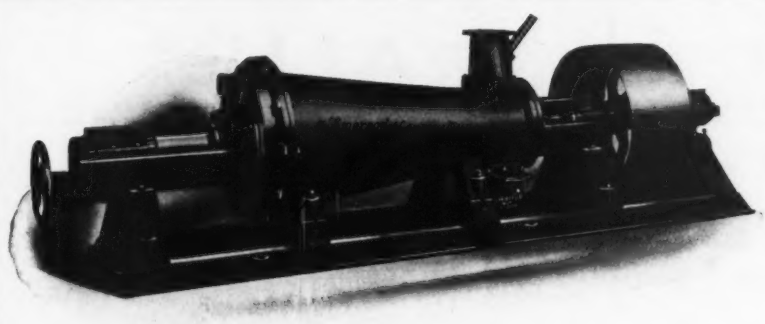

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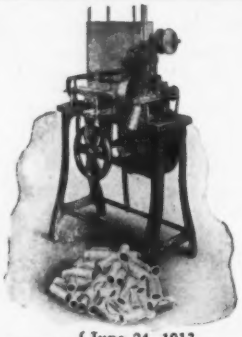

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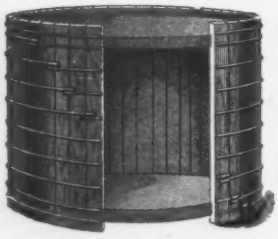

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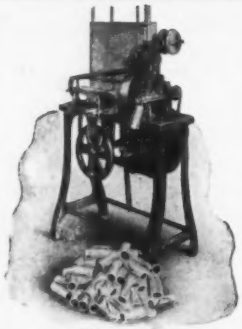

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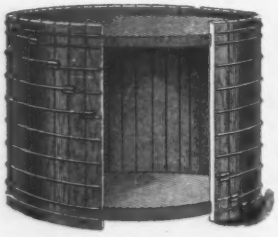

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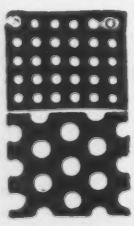

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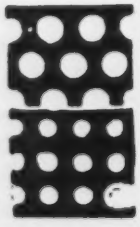

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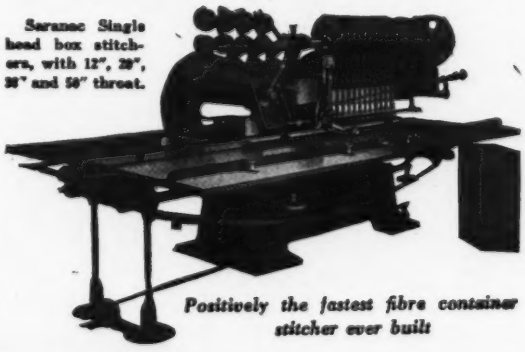

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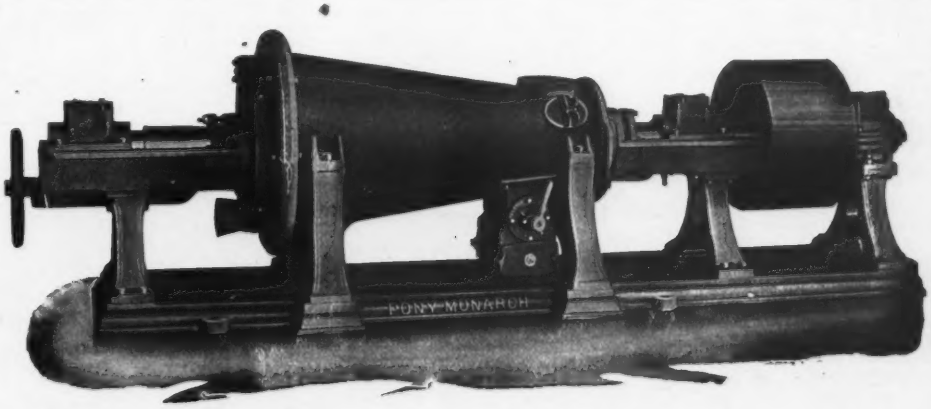

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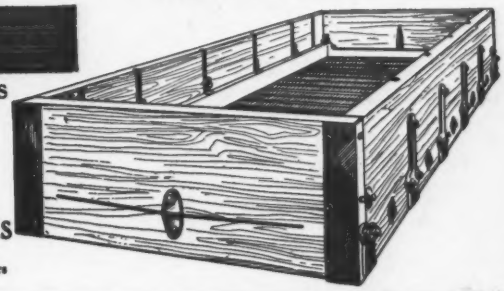

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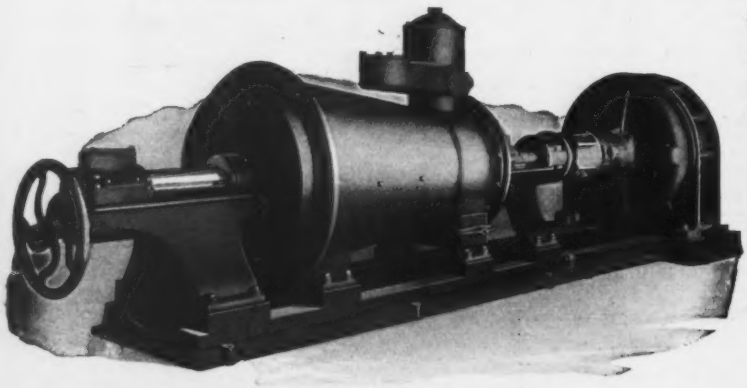

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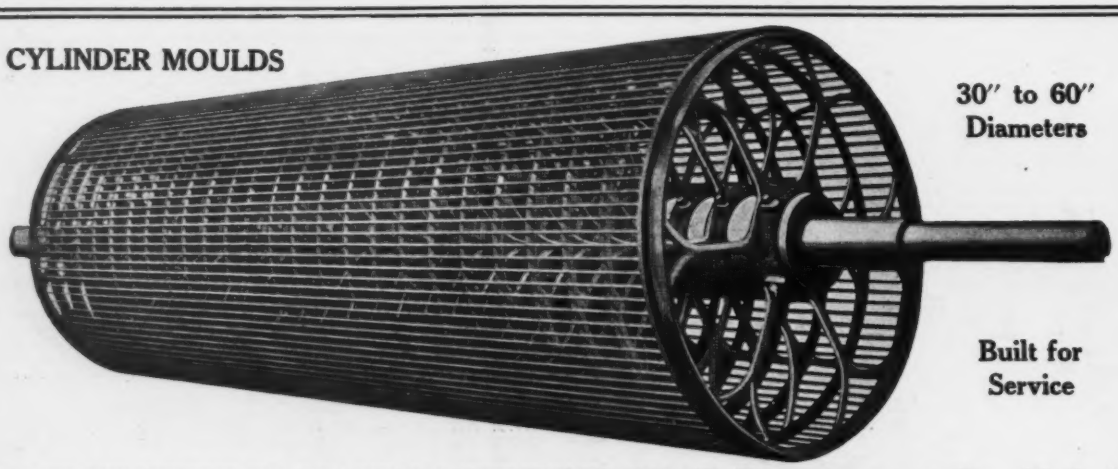

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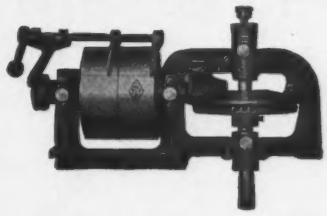

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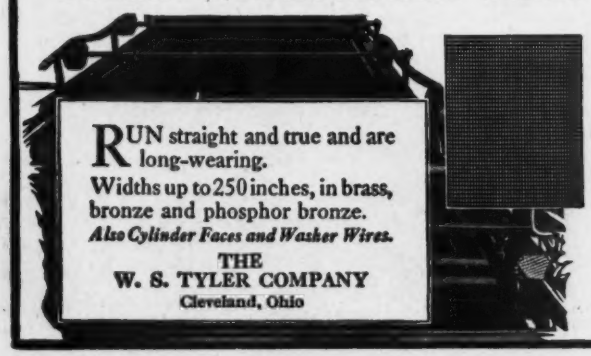

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